

AD-A069 457

OKLAHOMA UNIV NORMAN COLL OF EDUCATION

F/G 5/10

COGNITIVE STYLES: A BIBLIOGRAPHY AND SELECTED ANNOTATIONS.(U)

MAY 79 K T BACK, V STANSELL, T J RAGAN

F33615-77-C-0047

UNCLASSIFIED

AFHRL-TR-78-90(II)

NL

1 OF 1  
AD  
A069457





**AIR FORCE**



**HUMAN**

**RESOURCES**

**A069457**

**DDC FILE COPY**

**(72)**

**LEVEL**

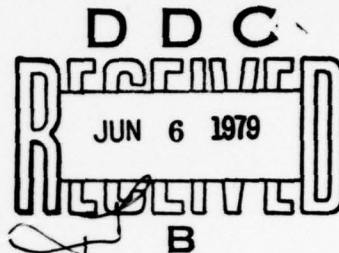
*III*  
*A069435*

**COGNITIVE STYLES:**

**A BIBLIOGRAPHY AND SELECTED ANNOTATIONS**

By

Kathryn T. Back  
Vance Stansell  
Tillman J. Ragan  
Lynna J. Ausburn  
Floyd B. Ausburn  
Keith Huckabey  
University of Oklahoma  
College of Education  
Norman, Oklahoma 73019



**TECHNICAL TRAINING DIVISION**  
Lowry Air Force Base, Colorado 80230

May 1979  
Interim Report for Period January 1977 - January 1978

Approved for public release; distribution unlimited.

**LABORATORY**

**AIR FORCE SYSTEMS COMMAND**  
BROOKS AIR FORCE BASE, TEXAS 78235

## NOTICE

When U.S. Government drawings, specifications, or other data are used for any purpose other than a definitely related Government procurement operation, the Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This interim report was submitted by the University of Oklahoma, College of Education, Norman, Oklahoma 73019 under contract F33615-77-C-0047, project 2313, with Technical Training Division, Air Force Human Resources Laboratory (AFSC), Lowry Air Force Base, Colorado 80230. Dr. James R. Burkett was the Contract Monitor for the Laboratory.

This report has been reviewed by the Information Office (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

MARTY R. ROCKWAY, Technical Director  
Technical Training Division

RONALD W. TERRY, Colonel, USAF  
Commander

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

19 REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
1. REPORT NUMBER AFHRL-TR-78-90(II)	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle) COGNITIVE STYLES: A BIBLIOGRAPHY AND SELECTED ANNOTATIONS		5. TYPE OF REPORT & PERIOD COVERED Interim rept. January 1977 - January 1978	
6. AUTHOR(s) Kathryn T. Back Vance/Stansell Tillman J. Ragan		7. PERFORMING ORG. REPORT NUMBER	
8. CONTRACT OR GRANT NUMBER(s) F33615-77-C-0047		9. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 61102F 2313T405	
10. CONTROLLING OFFICE NAME AND ADDRESS University of Oklahoma College of Education Norman, Oklahoma 73109		11. REPORT DATE May 79	
12. CONTROLLING OFFICE NAME AND ADDRESS HQ Air Force Human Resources Laboratory (AFSC) Brooks Air Force Base, Texas 78235		13. NUMBER OF PAGES 90	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Technical Training Division Air Force Human Resources Laboratory Lowry Air Force Base, Colorado 80230		15. SECURITY CLASS. (of this report) Unclassified	
15a. DECLASSIFICATION/DOWNGRADING SCHEDULE		16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.	
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)			
18. SUPPLEMENTARY NOTES The study reported herein is basic research which may be of interest only to a limited audience. Volume I of this report is a state-of-the-art summary of cognitive styles, based on a review of the literature listed in Volume II.			
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) cognitive styles conceptualizing style field dependence-independence impulsivity-reflectivity learning styles leveling-sharpening perceptual styles technical training tolerance for unrealistic experience visual-haptic style			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The bibliography entries and annotations presented in this report are the result of an extensive review of research literature concerning cognitive style constructs and their measuring instruments. Ten cognitive styles were identified as most relevant. This bibliography was the basis from which the review of the cognitive style literature (AFHRL-TR-78-90(I)) was written.			

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

411 203

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

[The main body of the page is a large rectangular box, currently empty, intended for the classification marking.]

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

## SUMMARY

The bibliography entries and annotations presented in this report are the result of an extensive review of research literature concerning cognitive style constructs and their measuring instruments. Ten cognitive styles were identified as most relevant and (with only a few exceptions) are the subjects of investigation in the studies listed. These cognitive styles include:

- (1) Field dependence-independence
- (2) Impulsivity-reflectivity
- (3) Visual-haptic
- (4) Leveling-sharpening
- (5) Distractibility (constricted-flexible control)
- (6) Breadth of categorization
- (7) Scanning-focusing
- (8) Tolerance for unrealistic experiences
- (9) Cognitive complexity
- (10) Conceptualizing style

The bibliography entries in each section are listed in alphabetical order in accordance with the American Psychological Association guidelines (APA Publication Manual). The annotated bibliography section also includes abstracts which in most cases are organized around the subject, method, and results of each study covered.

The approach included the following:

1. An extensive search of the literature was accomplished with the aid of automated computer searches such as GYPSIE, Psychological Abstracts, Dissertation Abstracts, and by conventional means. This search produced approximately 3500 citations.

2. Journal articles, books, dissertations, and other materials identified in the literature search were obtained and reviewed.

3. Relevant materials were then inserted into an automated computerized retrieval system set up for this project. Each citation was then accessible from the system not only by author and title but also by a specific code as to its relative importance to the project.

4. Selected bibliographical entries were chosen to be annotated because of their special significance to the research effort.

This bibliography and annotations of works dealing with the cognitive styles constructs were the basis from which the written review of the cognitive style literature was done. The written review of the literature concerning the ten cognitive styles is presented in AFHRL-TR-78-90(I).

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist.	Avail and/or special
<b>A</b>	

## SECTION I

### COGNITIVE STYLES

### BIBLIOGRAPHY

- Adams, R.C. Perceptual correlates of the Rod and Frame Test: A critical response. Perceptual and Motor Skills, 1974, 38, 1004-1046.
- Adevai, G., & McGough, W.E. Retest reliability of Rod and Frame scores during early adulthood. Perceptual and Motor Skills, 1968, 26, 1306.
- Adevai, G., Silvermen, A.J., & McGough, W.E. MMPI findings in field-dependent and field-independent subjects. Perceptual and Motor Skills, 1968, 26, 3-8.
- Adevai, G., Silverman, A.J., & McGough, W.E. Perceptual correlates of the Rod and Frame Test. Perceptual and Motor Skills, 1968, 26, 1055-1064.
- Albert, J.A. Modification of the impulsive conceptual style (Doctoral dissertation, University of Illinois at Urbana-Champaign, 1970). Dissertations Abstracts International, 1970, 30, 3377B. (University Microfilms No. 70-00778)
- Alexander, J.B., & Gudeman, H.E. Perceptual and interpersonal measures of field dependence. Perceptual and Motor Skills, 1965, 20, 79-86.
- Anderson, A.L., & Ruth, E. Relation between spiral aftereffect duration and Rod and Frame Test performance in early childhood. Perceptual and Motor Skills, 1971, 32, 843-849.
- Apter, M.J. Free information-structuring and the investigation of cognitive style. Psychological Reports, 1971, 29, 1250.
- Arbuthnot, J.B. Field independence and maturity of moral judgement, critical distinctive feature analysis, and perceived locus of control (Doctoral dissertation, Cornell University, 1971). Dissertation Abstracts International, 1971, 32, 2190A. (University Microfilms No. 71-25146)
- Arbuthnot, J.B. Cautionary note on measurement of field independence. Perceptual and Motor Skills, 1972, 35, 479-488.
- Arbuthnot, J.B. Cognitive style and modification of moral judgement. Psychological Reports, 1974, 34, 273-274.

- Arbuthnot, J.B., & Gruenfeld, L. Field independence and educational-vocational interests. Journal of Consulting and Clinical Psychology, 1969, 33, 631.
- Arnheim, R. Visual Thinking. Los Angeles: University of California Press, 1969.
- Asch, S.E., & Witkin, H.A. Studies in space orientation: I. Perception of the upright with displaced visual fields. Journal of Experimental Psychology, 1948, 38, 325-337.
- Asch, S.E., & Witkin, H.A. Studies in space orientation: II. Perception of the upright with displaced visual fields and with body tilted. Journal of Experimental Psychology, 1948, 38, 455-477.
- Atwood, B.S. Helping students recognize their own learning styles. Learning, 3, 8, 72-8.
- Ault, R.L., Crawford, D.E., & Jeffrey, W.E. Visual scanning strategies of reflective, impulsive, fast-accurate, and slow-accurate children on the Matching Familiar Figures Test. Child Development, 1972, 43, 1412-1417.
- Ault, R.S., Mitchell, C., & Hartmann, D.P. Some methodological problems in reflection-impulsivity research. Child Development, 1976, 47, 227-231.
- Ausburn, F.B. Multiple versus linear imagery in the presentation of a comparative visual location task to visual and haptic college students (Doctoral dissertation, University of Oklahoma, 1975). Dissertation Abstracts International, 1976, 37, 100A. (University Microfilms No. 76-15794)
- Ausburn L.J. Relationships among cognitive style factors and perceptual types in college students (Doctoral dissertation, University of Oklahoma, 1976). Dissertation Abstracts International, 1976, 37, 2586A. (University Microfilms No. 76-24355)
- Ausburn, L.J., Back, K.T., & Hoover, B. A comparison of remedial and non-remedial readers on selected perceptual style variables. Paper presented at the National Convention of the Association for Educational Communications and Technology, Anaheim, California, 1976.

- Axelrod, S., & Cohen, L.D. Senescence and embedded-figure performance in vision and touch. Perceptual and Motor Skills, 1961, 12, 283-288.
- Ayabe, H.I. The relationship between conceptual tempo, need achievement and anxiety. Unpublished manuscript, University of Hawaii, 1968.
- Ayabe, H.I. Measuring reflection impulsivity accurately. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, Louisiana, 1973. (ERIC Document Reproduction Service No. ED 079333)
- Ayers, J.B., & Rohr, M.E. Evaluation of two instrumental procedures for use with Embedded-Figures Subtest of Purdue Motion-Picture Screening Test. Perceptual and Motor Skills, 1976, 42, 133-134.
- Baird, R.R., & Bee, H.L. Modification of conceptual style preference by differential reinforcement. Child Development, 1969, 40, 903-910.
- Banks, J.C. An investigation of the interaction of learning styles and types of learning experiences in vocational-technical education. Wisconsin University, Stout; Menomonie Center for Vocational, Technical and Adult Education, 1973. (ERIC Document Reproduction Service No. ED 086835)
- Baran, M.R. The dependence of map reading skills on field articulation in sixth grade pupils (Doctoral dissertation, Boston University, 1975). Dissertation Abstracts International, 1975, 36, 1422A. (University Microfilms No. 75-20914)
- Barnsley, R.H., & Rabinovitch, M.S. Handedness and "automatization" cognitive style. Canadian Journal of Psychology, 1973, 27, 7-15.
- Barratt, E.E. Anxiety and impulsiveness related to psychomotor efficiency. Perceptual and Motor Skills, 1959, 9, 191-198.
- Barrett, G.V., & Thornton, C.L. Cognitive style differences between engineers and college students. Perceptual and Motor Skills, 1967, 25, 789-793.
- Barrett, G.V., & Thornton, C.L. Two methods of determining body sensitivity: A comparison and evaluation. Perceptual and Motor Skills, 1967, 25, 374-376.

- Barrett, G.V., & Thornton, C.L. Relationship between perceptual style and driver reaction to an emergency situation. Journal of Applied Psychology, 1968, 52, 169-176.
- Barrett, G.V., & Thornton, C.L. Relationship between perceptual style and simulator sickness. Journal of Applied Psychology, 1968, 52, 304-308.
- Barrett, C.V., & Thornton, C.L. Perceptual style and speed judgements. Perceptual and Motor Skills, 1969, 29, 75-77.
- Barrett, C.V., Cabe, P.A., & Thornton, C.L. Relation of perceptual style to measures of visual functioning. Perceptual and Motor Skills, 1967, 25, 235-236.
- Barrett, G.V., Cabe, P.A., & Thornton, C.L. Visual functioning and Embedded Figures Test performance. Perceptual and Motor Skills, 1967, 25, 998.
- Barrett, G.V., Cabe, P.A., & Thornton, C.L. Relation between Hidden Figures Test and Rod and Frame Test measures of perceptual style. Educational and Psychological Measurement, 1968, 28, 551-554.
- Barrett, G.V., Cabe, P.A., Thornton, C.L., & O'Connor, E.J. Relations between field dependence and reactions to changes in job attributes. Journal of Applied Psychology, 1975, 60, 649-651.
- Barrett, G.V., Thornton, C.L., & Cabe, P.A. Relation between Embedded Figures Test performance and simulator behavior. Journal of Applied Psychology, 1969, 53, 253-254.
- Barrett, G.V., Thornton, C.L., & Cabe, P.A. Cue conflict related to perceptual style. Journal of Applied Psychology, 1973, 54, 258-264.
- Barrett, G.V., Williamson, T.R., & Thornton, C.L. Perception of depth as measured by magnitude estimation. Perceptual and Motor Skills, 1967, 25, 905-908.
- Barrett, P.E. Use of EEG in the study of imagery. British Journal of Psychology, 1956, 47.
- Barron, F., Block, J., Mackinnon, D.W., & Woodworth, D.G. An assessment study of Air Force officers. Part III:

- Assessment correlates of criteria of officer effectiveness. Lackland Air Force Base, Texas. (ASTIA Document No. AD 210218) Personnel Laboratory, Wright Air Development Center, Air Research and Development Command, 1958.
- Bauer, R., & Gillies, J. Cognitive style and influence of success and failure on future time-perspective. Perceptual and Motor Skills, 1972, 34, 79-82.
- Beattie, I., & Deichmann, J. Individual response. Instructor, 1972, 81, 29.
- Becker, J., Doctor, R.M., Miranda, M., & Wallace, J. Analytic-perceptual style and verbal conditioning. Perceptual and Motor Skills, 1971, 32, 631-636.
- Bender, N.N. Self-verbalization versus tutor verbalization in modifying impulsivity. Journal of Educational Psychology, 1976, 68, 347-354.
- Benfari, R., & Vitale, P. Relationship between vertical orientation in the Rod and Frame Test and in a compensatory tracking task. Perceptual and Motor Skills, 1965, 20, 1073-1080.
- Bennett, D.H. Perception of the upright in relation to body image. Journal of Mental Science, 1956, 102, 487-506.
- Bentler, P.M., & McClain, J. A multitrait-multimethod analysis of reflection-impulsivity. Child Development, 1976, 47, 218-226.
- Berent, S. Field dependence and localization of brain function: Implications for psychopathology and treatment. Paper presented at the annual meeting of the Southeastern Psychological Association, New Orleans, 1973.
- Berent, S., & Silverman, A.J. Field dependence and differences between visual and verbal learning tasks. Perceptual and Motor Skills, 1973, 36, 1327-1330.
- Bergman, H., & Engelbrektson, K. An examination of factor structure of Rod and Frame Test and Embedded Figures Test. Perceptual and Motor Skills, 1973, 37, 939-947.

- Bernstein, B.R., & Gonzalez, G.K. Learning, retention and transfer, volume I of II. Minneapolis, Minn.: Honeywell Inc., 1971. (ERIC Document Reproduction Service No. ED 050561)
- Berkowitz, L. Leveling tendencies and the complexity-simplicity dimension. Journal of Personality, 1957, 25, 743-752.
- Berzonsky, M.D., & Ondrako, M.A. Cognitive style and logical deductive reasoning. Journal of Experimental Education, 1974, 43, 18-24.
- Bieri, J. Complexity-simplicity as a personality variable in cognitive and preferential behavior. In D.W. Fiske & S.R. Maddi (ED.), Functions of varied experience, Homewood, Il.: Dorsey, 1961, pp. 355-379.
- Bieri, J. Cognitive complexity and personality development. In O.J. Harvey (ED.), Experiment structure and adaptability, New York: Springer, 1966, pp. 13-37.
- Bieri, J. Category width as a measure of discrimination. Journal of Personality, 1969, 37, 513-521.
- Bieri, J., Atkins, A.L., Brian, J.S., Leaman, R.L., Miller, H., & Tripodi, T. Clinical and social judgements: The discrimination of behavioral information. New York: Wiley, 1966.
- Bieri, J., Bradburn, W.M., & Galinsky, M.D. Sex differences in perceptual behavior. Journal of Personality, 1958, 26, 1-12.
- Bigelow, S. Field dependence-field independence in 5 to 10 year old children. Journal of Educational Research, 1971, 64, 397-400.
- Bjorklund, D.F., & Butler, E.J. Can cognitive impulsivity be predicted from classroom behavior? Journal of Genetic Psychology, 1973, 123, 185-194.
- Blanton, W.E., & Bullock, T. Cognitive style and reading behavior. Reading World, 1973, 12, 276-287.
- Blasi, E.R., Cross, H.A., & Herbert, J.A. Effects of field dependence on weight comparisons. Perceptual and Motor Skills, 1972, 35, 111-114.

- Block, J., & Block, J.H. An investigation of the relationship between intolerance of ambiguity and egocentrism. Journal of Personality, 1951, 19, 303-311.
- Block, J., Block, J.H., & Harrington, D.M. Some misgivings about the Matching Familiar Figures Test as a measure of reflection-impulsivity. Developmental Psychology, 1974, 10, 611-132.
- Block, J., Block, J.H., & Harrington, D.M. Comment on the Kagan-Messer reply. Developmental Psychology, 1975, 11, 249-252.
- Bloomberg, M. Anagram solutions of field-independent and field-dependent persons. Perceptual and Motor Skills, 1965, 21, 766.
- Bloomberg, M. Field independence-dependence and susceptibility to distraction. Perceptual and Motor Skills, 1965, 20, 805-813.
- Bloomberg, M. Differences between field-independent and field-dependent persons on the Stroop Color-Word Test. Journal of Clinical Psychology, 1969, 25, 45.
- Bloomberg, M. An inquiry into the relationship between field independence-dependence and creativity. Journal of Psychology, 1967, 67, 127-140.
- Bloomberg, M. Creativity as related to field independence and mobility. Journal of Genetic Psychology, 1971, 118, 3-12.
- Bloomberg, M., & Soneson, S. Effect of locus of control and field independence-dependence on moral reasoning. Paper presented at the meeting of the Eastern Psychological Association, New York, 1975.
- Blowers, G.H. Field dependence and distraction revisited. Perceptual and Motor Skills, 1976, 42, 295-297.
- Bodden, J.L. Cognitive complexity as a factor in appropriate vocational choice. Journal of Counseling Psychology, 1970, 17(4), 364-368.
- Bodden, J.L., & James, L.E. Influence of occupational information giving on cognitive complexity. Journal of Counseling Psychology, 1976, 23, 280-282.

- Bodden, J.L., & Klein, A.J. Cognitive complexity and appropriate vocational choice: Another look. Journal of Counseling Psychology, 1976, 19, 257-258.
- Bodine, R.L. The effects of cognitive style, task structure and task setting performance (Doctoral dissertation, Purdue University, 1975). Dissertation Abstracts International, 1976, 36, 5935A. (University Microfilms No. 76-07043)
- Boersma, F.J. Test-retest reliability of the CF-1 Hidden Figures Test. Educational and Psychological Measurement, 1968, 28, 555-559.
- Boersma, F.J., Muir, W., Wilton, K., & Barham, R. Eye movements during embedded figures tasks. Perceptual and Motor Skills, 1969, 28, 271-274.
- Bone, R.M., & Eysenck, J.H. Extraversion, field-dependence, and the Stroop Test. Perceptual and Motor Skills, 1972, 34, 873-874.
- Botkin, E.B. Fixity-mobility: Its relationship to field independence rigidity (Doctoral dissertation, Yeshiva University, 1973). Dissertation Abstracts International, 1974, 34, 4653B. (University Microfilms No. 74-07857)
- Bowd, A.D. A cross-cultural study of the factorial composition of mechanical aptitude. Canadian Journal of Behavioural Science, 1973, 5, 13-23.
- Bowd, A.D. Retest reliability of the Children's Embedded Figures Test for young children. Perceptual and Motor Skills, 1974, 39, 442.
- Breskin, S., & German, B.S. On rigidity and field dependence. Perceptual and Motor Skills, 1969, 29, 541-542.
- Brilhart, B.L., & Brilhart, J.K. Field independence and academic achievement of engineering students. Perceptual and Motor Skills, 1971, 32, 443-446.
- Brinton, G., & Rouleau, R.A. Automating the Hidden and Embedded Figures Tests. Perceptual and Motor Skills, 1969, 29, 401-402.

- Broughton, J.P. An investigation of analytical-global cognitive style and classification ability among elementary school children (Doctoral dissertation, University of Texas at Austin, 1975). Dissertation Abstracts International, 1975, 36, 2610A. (University Microfilms No. 75-24846)
- Broverman, D.M., Broverman, I.K., & Klaiber, E.L. Ability to automatize and automatization cognitive style: A validation study. Perceptual and Motor Skills, 1966, 23, 419-437.
- Bruner, J.S., Oliver, R.R., & Greenfield, R.M. Studies in cognitive growth. New York: Wiley, 1966.
- Bruner, J.S., & Tajfel, H. Cognitive risk and environmental change. Journal of Abnormal and Social Psychology, 1961, 62, 231-241.
- Bruning, W.A. Visual aptitude as it relates to student achievement in reading and mathematics (Doctoral dissertation, University of Oklahoma, 1974). Dissertation Abstracts International, 1975, 35, 5212A. (University Microfilms No. 75-02963)
- Bucky, S.F., Banta, T.J., & Gross, R.B. Development of motor impulse control and reflectivity. Perceptual and Motor Skills, 1972, 34, 813-814.
- Burdick, J.A. Eye movements during the Embedded Figures Test. Perceptual and Motor Skills, 1965, 21, 726.
- Buriel, R. Cognitive styles among three generations of Mexican-American children. Journal of Cross-Cultural Psychology, 1975, 6, 417-429.
- Busch, J.C., & DeRidder, J.M. Note on control for intelligence in studies of field dependence with young children. Perceptual and Motor Skills, 1971, 32, 337-338.
- Bush, D.F., & Andrulis, R.S. Relationships between performance by adult males on Matching Figures and Hidden Figures Test. Perceptual and Motor Skills, 1975, 41, 530.
- Bush, D.F., & Coward, R.T. Sex differences in the solution of achromatic and chromatic embedded figures. Perceptual and Motor Skills, 1974, 39, 1121-1122.

- Bush, E.S., & Dweck, C.S. Reflections on conceptual tempo: Relationship between cognitive style and performance as a function of task characteristics. Developmental Psychology, 1975, 11, 567-574.
- Butler, P.A. The relationship of age, analytical ability, field articulation, and leveling-sharpening to assimilation tendencies in time-error (Doctoral dissertation, University of Oklahoma, 1977). Dissertation Abstracts International, 1977, 38, 1989A. (University Microfilms No. 77-21366)
- Cabe, P.A. Note on response sets on the Rod and Frame Test. Perceptual and Motor Skills, 1968, 26, 94.
- Cabe, P.A. The relations between the Rod and Frame Test and Witkin's Embedded Figures Test. Educational and Psychological Measurement, 1968, 28, 1243-1245.
- Cairns, E., & Harbison, J.I. Impulsivity: Self-report and performance measure. Journal of Educational Psychology, 1975, 67, 807-820.
- Campbell, D.R., Dyer, F.M., & Boersma, F.J. Field dependency and picture recognition ability. Perceptual and Motor Skills, 1967, 25, 713-716.
- Campbell, D.S., & Schwen, T.M. Beyond the remedial loop: Toward the integration of task and learner analysis for a process approach to instructional development. Paper presented at the Association for Educational Communications and Technology Annual Convention, Philadelphia, PA, 1971. (ERIC Document Reproduction Service No. ED 049599)
- Campbell, S.B. Cognitive styles in reflective, impulsive, and hyperactive boys and their mothers. Perceptual and Motor Skills, 1973, 36, 747-752.
- Campbell, S.B. Mother-child interaction in reflective, impulsive, and hyperactive children. Developmental Psychology, 1973, 8, 341-349.
- Caring, L.C. The relation of cognitive style, sex, and intelligence to moral judgement in children (Doctoral dissertation, New York University, 1970). (University Microfilms No. 71-13633)

- Case, R. Gearing the demand of instruction to the developmental capacities of the learner. Review of Educational Research, 1975, 45, 59-87.
- Cathcart, W.G., & Liedtke, W. Reflectiveness/impulsiveness and mathematics achievement. Arithmetic Teacher, 1969, 16, 563-567.
- Cattell, R.B. Is field independence an expression of the general personality source trait of independence, U.I. 19? Perceptual and Motor Skills, 1969, 28, 865-866.
- Clark, F.E. Effects of two learning treatments on the understanding of orthographic projection on students varying in visual-haptic aptitude (Doctoral dissertation, University of Missouri, 1971). Dissertation Abstracts International, 1972, 32, 5033A. (University Microfilms No. 72-10547)
- Clark, S.L. Authoritarian attitudes and field dependence. Psychological Reports, 1968, 22, 309-310.
- Clemes, S.R., & Dement, W.C. Effect of REM sleep deprivation on psychological functioning. Journal of Nervous and Mental Disease, 1967, 144, 485-491.
- Coates, S. Preschool Embedded Figures Test manual. Palo Alto, Calif.: Consulting Psychologists Press, 1972.
- Coates, S., & Bornberg, P.M. Factorial structure of the Wechsler preschool and primary scale of intelligence between the ages of 4 and 6 1/2. Journal of Consulting and Clinical Psychology, 1973, 40, 365-370.
- Cohen, A., & Farley, F.H. An exploratory study of individual differences in perceptual centering and decentering. Journal of Psychology, 1973, 84, 133-136.
- Cohen, B.D., Berent, S., & Silverman, A.J. Field-dependence and lateralization of function in the human brain. Archives of General Psychiatry, 1973, 28, 165-167.
- Cohen, H.S., & Feldman, J.M. On the domain specificity of cognitive complexity: An alternative approach. Paper presented at the annual meeting of the American Psychological Association, Chicago, IL, 1975. (ERIC Document Reproduction Service No. ED 117639)

- Cohen, S. A study of impulsivity in low-achieving and high-achieving boys from lower income homes. New York: Columbia University, Teachers College. (ERIC Document Reproduction Service No. ED 041097)
- Cohen, S., & Przybycien, C.A. Modifications in children's cognitive styles: Some effects of peer modeling. Paper presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, PA, 1973. (ERIC Document Reproduction Service, No. ED 078906)
- Cohen, W., & Tepas, D. Temporal factors in the perception of verticality. American Journal of Psychology, 1958, 71, 760-763.
- Conry, R.F. Effects of cognitive style differences and stimulus factors on free-sorting behavior (Doctoral dissertation, University of Wisconsin, 1973). Dissertation Abstracts International, 1973, 34, 1123A. (University Microfilms No. 73-19294)
- Coop, R.H., & Sigel, I.E. Cognitive style: Implications for learning and instruction. Psychology in the Schools, 1971, 8, 152-161.
- Crandall, V.J., & Sinkeldam, C. Children's dependent and achievement behavior in social situations and their perceptual field dependence. Journal of Personality, 1964, 32, 1-22.
- Crockett, W.H. Cognitive complexity and impression formation. In M.A. Maher (ED.), Progress in experimental personality research, Vol. 2. New York: Academic Press, 1965, pp. 47-90.
- Cross, H.A., Schuck, J.R., & Dannemiller, E. Judgements of verticality as a function of exposure duration, luminance, frame tilt, and frame-rod interval. Psychonomic Science, 1972, 26, 65-68.
- Crutchfield, R.S., Woodworth, D.G., & Albrecht, R.E. Perceptual performance and the effective person. Lackland Air Force Base, Texas: Personnel Laboratory, Wright Air Development Center, Air Research and Development Command, 1958.
- Cullen, J.F., Harper, C.R., & Kedera, G.J. Perceptual style differences between airline pilots and engineers. Aerospace Medicine, 1969, 4, 407-408.

- Curcio, F., & Weiss, B. The effects of conservation training upon children with different cognitive styles. Boston, Mass.: Boston University, 1974. (ERIC Document Reproduction Service No. ED 094888)
- Dana, R.H., & Goocher, B. Embedded figures and personality. Perceptual and Motor Skills, 1959, 9, 99-102.
- Dargel, R., & Kirk, R.E. Manifest anxiety, field dependency, and task performance. Perceptual and Motor Skills, 1971, 32, 383-393.
- Dargel, R., & Kirk, R.E. Note on relation of anxiety to field dependency. Perceptual and Motor Skills, 1973, 37, 218.
- David, O., & Glicksman, M. Cognitive style and the Perky Effect. Perceptual and Motor Skills, 1976, 42, 432-434.
- Davidshofer, C.O. Risk taking and vocational choice: A reevaluation. Journal of Counseling Psychology, 1976, 23, 151-154.
- Davis, A.J. Cognitive style: Methodological and developmental considerations. Child Development, 1971, 42, 447-459.
- Davis, J.K. Strategy development and hypothesis testing as a function of an individual's cognitive style. Lafayette Indiana: Purdue University, 1972.
- Davis, J.K. Cognitive style and hypothesis testing. Paper presented at the American Educational Research Association, New Orleans, La., 1973.
- Davis, J.K. Hypothesis testing as a function of an individual's cognitive style. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL, 1974.
- Davis, J.K. Strategy development and utilization in concept identification as a function of an individual's cognitive style. Paper presented at the annual meeting of The American Psychological Association, New Orleans, LA, 1974)
- Dawson, J.L.M. Temme-arunta Hand-eye dominance and cognitive style. International Journal of Psychology, 1972, 7, 219-233.

- DeFazio, V.J., & Moroney, W.F. Performance characteristics of field dependent and independent individuals on an auditory signal detection task. Journal of Psychology, 1969, 71, 77-82.
- DeKoninck, J.M., & Grabbe-Decleve, G. Field dependence and Rorschach white-space figure-ground reversal responses. Perceptual and Motor Skills, 1971, 33, 1191-1194.
- DeRussy, E.A., & Futch, E. Field dependence-independence as related to college curricula. Perceptual and Motor Skills, 1971, 33, 1235-1237.
- Debus, R.L. Effects of brief observation of model behavior on conceptual tempo of impulsive children. Developmental Psychology, 1970, 2, 22-32.
- Denike, L., & Strother, S.D. A learner characteristic vital to instruction development: Educational cognitive style. Educational Technology, 1975, 15, 58-59.
- Denmark, R.L., Havlena, R.A., & Murgatroyd, D. Reevaluation of some measures of cognitive styles. Perceptual and Motor Skills, 1971, 33, 133-134.
- Denney, D.R. Modeling effects upon conceptual style and cognitive tempo. Child Development, 1972, 43, 105-119.
- Denney, D.R. Relationship of three cognitive style dimensions to elementary reading abilities. Journal of Educational Psychology, 1974, 66, 702-709.
- Dershowitz, Z. Jewish subcultural patterns and psychological differentiation. International Journal of Psychology, 1971, 6(3), 223-231.
- Dickstein, L.S. Field independence in concept attainment. Perceptual and Motor Skills, 1968, 27, 635-642.
- Dodwell, P.C. Figural aftereffects and field dependence: Another ground for skepticism. Psychonomic Science, 1969, 14, 84.
- Doktor, R. The development and mapping of certain cognitive styles of problem solving (Doctoral dissertation, Stanford University, 1969). Dissertation Abstracts International, 1970, 31, 1432A. (University Microfilms No. 70-18396)

- Drake, D.M. Perceptual correlates of impulsive and reflective behavior. Developmental Psychology, 1970, 2, 202-214.
- Drewes, H. An experimental study of the relationship between electroencephalographic imagery variables and perceptual-cognitive processes (Doctoral dissertation, Cornell University, 1958). Dissertation Abstracts International, 1958, 19, 87. (University Microfilms No. 58-02438)
- Dubois, T.E., & Cohen, W. Relationship between measures of psychological differentiation and intellectual ability. Perceptual and Motor Skills, 1973, 31, 411-416.
- Dudgeon, P.J. Innovative approaches to adult basic education in the continuing education division of Canadore College, North Bay. North Bay, Ontario, Canada: Canadore College, 1973. (ERIC Document Reproduction Service No. ED 099083)
- Dumsha, T.C., Minard, J., & McWilliams, J. Comparison of two self-administered field dependency measures. Perceptual and Motor Skills, 1973, 36, 252-254.
- Dunn, R., & Dunn, K. Finding the best fit--learning styles, teaching styles. NASSP Bulletin, 1975, 59, 37-49.
- Dupreez, P.D. Field dependence and accuracy of comparison of time intervals. Perceptual and Motor Skills, 1967, 24, 467-472.
- Dyk, R.B., & Witkin, H.A. Family experiences related to the development of differentiation in children. Child Development, 1965, 36, 21-55.
- Eagle, M., Fitzgibbons, C., & Goldberger, L. Field dependence and memory for relevant and irrelevant incidental stimuli. Perceptual and Motor Skills, 1966, 32, 1035-1038.
- Eagle, M., Goldberger, L., & Breitman, M. Field dependence and memory for social versus neutral and relevant versus irrelevant incidental stimuli. Perceptual and Motor Skills, 1969, 29, 903-910.
- Eberhard, G. A serial Rod and Frame Test: Pilot Study. Psychological Research Bulletin, 1964, 4, 1-11.

- Egeland, B. Training impulsive children in the use of more efficient scanning techniques. Child Development, 1974, 45, 165-171.
- Eisner, D.A. A life-span analysis of perceptual differentiation and fixity-mobility (Doctoral dissertation, West Virginia University, 1970). Dissertation Abstracts International, 1971, 31, 4968B. (University Microfilms No. 71-04846)
- Eisner, D.A. Developmental relationships between field independence and fixity-mobility. Perceptual and Motor Skills, 1972, 34, 767-770.
- Eisner, D.A. Life-span age differences in visual perception. Perceptual and Motor Skills, 1972, 34, 857-858.
- Eisner, D.A. Relationships between line length and angle size judgements and Embedded-Figures Test performance. Perceptual and Motor Skills, 1972, 34, 194.
- Ekstrom, R.B. Cognitive factors: Some recent literature. Princeton, N.J.: Educational Testing Service, 1973.
- Ekstrom, R.B. Teacher aptitude and cognitive style: Their relation to pupil performance. Paper presented at the Annual Meeting of the American Psychological Association, New Orleans, LA, 1974. (ERIC Document Reproduction Service No. ED 100496)
- Elkind, D., Kogler, R.R., & Go, E. Field independence and concept formation. Perceptual and Motor Skills, 1963, 17, 383-386.
- Elliot, C.A. The effects of instructional designs matched to individual differences in cognitive styles on concept learning in geometry: A trait-treatment interaction study (Doctoral dissertation, University of Southern California, 1975). Dissertation Abstracts International, 1976, 36, 5940A. (University Microfilms No. 76-05240)
- Elliot, C.A. The effects of instructional designs matched to individual differences in cognitive styles on concept learning: A trait-treatment interaction study. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA, 1976. (ERIC Document Reproduction Service No. ED 122973)

- Elliot, R. Interrelationships among measures of field dependence, ability, and personality traits. Journal of Abnormal and Social Psychology, 1961, 63, 27-36.
- Elliot, R., McMichale, R.E. Effects of specific training on frame dependence. Perceptual and Motor Skills, 1963, 17, 363-367.
- Elliott, R.H. An exploratory study of adult learning styles. (ERIC Document Reproduction Service No. ED 116016)
- Erickson, R.C. Visual-haptic aptitude: Effect on Mechanical drawing achievement. Journal of Industrial Teachers, 1964, 2, 40-46.
- Erickson, R.C. A comparison of visual-haptic aptitudes as they relate to student-teacher interaction in the teaching-learning process associated with beginning mechanical drawing (Doctoral dissertation, Purdue University, 1966). Dissertation Abstracts International, 1966, 27, 2066A. (University Microfilms No. 66-13188)
- Erickson, R.C. Visual-haptic aptitude: Effect on student achievement in reading. Journal of Learning Disabilities, 1969, 2, 21-25.
- Eska, B., & Black, K.N. Conceptual tempo in young grade school children. Child Development, 1971, 42, 505-516.
- Evans, F.J. Effects of practice on the validity of a group administered Embedded Figures Test. ACTA Psychologica, 1969, 29, 172-180.
- Evans, F.J., & Schmeidler, D. Inter-judge reliability of human figure drawing measures of field dependence. Perceptual and Motor Skills, 1966, 22, 630.
- Fancher, P.E. Problem-solving strategies of children as a function of conceptual tempo (Doctoral dissertation, Vanderbilt University, 1970). Dissertation Abstracts International, 1970, 30, 4791B. (University Microfilms No. 70-05401)
- Faterson, H.F., & Witkin, H.A. Longitudinal study of development of the body concept. Developmental Psychology, 1973, 2, 429-438.
- Fiebert, M. Cognitive styles in the deaf. Perceptual and Motor Skills, 1967, 24, 319-329.

- Fiebert, M. Sex differences in cognitive style. Perceptual and Motor Skills, 1967, 24, 1277-1278.
- Fisher, R.L. Failure of the Conceptual Styles Test to discriminate normal and highly impulsive children. Journal of Abnormal Psychology, 1966, 71, 429-431.
- Fitzgibbons, D.J., & Goldberger, L. Task and social orientation: A study of field dependence, "arousal," and memory for incidental material. Perceptual and Motor Skills, 1971, 32, 167-174.
- Fitzgibbons, D.J., Goldberger, L., & Eagle, M. Field dependence and memory for incidental material. Perceptual and Motor Skills, 1965, 21, 743-749.
- Fleck, J.R. Cognitive styles in children and performance on Piagetian Conservation Tasks. Perceptual and Motor Skills, 1972, 35, 747-756.
- Fletcher, H.J. Toward a general model for describing cognitive processes. Madison, Wisc.: Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin, 1969.
- Flick, P. An intercorrelative study of two creative types: The visual type and the haptic type (Doctoral dissertation, Pennsylvania State University, 1960). Dissertation Abstracts International, 1961, 21, 4791B. (University Microfilms No. 61-00035)
- Fredrick, W.C., & Klausmeier, H.J. Cognitive styles: A description. Education Leadership, 1969, 27(7), 68-72.
- French, J.W., Ekstrom, R.B., & Price, L.A. Kit of reference tests for cognitive factors. Princeton, N.J.: Educational Testing Service, 1963.
- Frick, J.W., Guilford, J.P., Christensen, P.R., & Merrifield, P.R. A factor-analytic study of flexibility in thinking. Educational and Psychological Measurement, 1959, 19, 469-495.
- Friedman, R. Relationship between intelligence and performance on the Stroop Color-Word Test in second- and fifth-grade children. Journal of Genetic Psychology, 1971, 118, 147-148.

- Gaines, L.S., & Miller, L.M. Measures of psychological differentiation: Rod and Frame Test and the psychological differentiation inventory. Perceptual and Motor Skills, 1973, 37, 146.
- Gardner, R.W. Cognitive styles in categorizing behavior. Journal of Personality, 1953, 22, 214-233.
- Gardner, R.W. Field dependence as a determinant of susceptibility to certain illusions. American Psychologist, 1957, 12, 397.
- Gardner, R.W. Cognitive controls of attention deployment as determinants of visual illusions. Journal of Abnormal and Social Psychology, 1961, 62, 120-127.
- Gardner, R.W. The development of cognitive structures. In C. Scheerer, Cognition: Theory, research, promise. New York: Harper and Row, 1964.
- Gardner, R.W. Reliability of group test scores for cognitive controls and intellectual abilities over a one-year period. Perceptual and Motor Skills, 1973, 36, 753-754.
- Gardner, R.W., & Lohrenz, L.J. Leveling-sharpening and serial reproduction of a story. Bulletin of the Menninger Clinic, 1960, 24, 295-304.
- Gardner, R.W., & Lohrenz, L.J. Some old and new group tests for the study of cognitive controls and intellectual abilities. Perceptual and Motor Skills, 1969, 29, 935-950.
- Gardner, R.W., & Long, R.I. Leveling-sharpening and serial learning. Perceptual and Motor Skills, 1960, 10, 179-185.
- Gardner, R.W., & Long, R.I. The stability of cognitive controls. Journal of Abnormal and Social Psychology, 1960, 61, 485-487.
- Gardner, R.W., & Long, R.I. Field articulation in recall. Psychological Record, 1961, 11, 305-510.
- Gardner, R.W., & Long, R.I. Control, defense, and centration effect: A study of scanning behavior. British Journal of Psychology, 1962A, 53, 129-140.

- Gardner, R.W., & Long, R.I. Cognitive controls of attention and inhibition: A study of individual consistencies. British Journal of Psychology, 1962B, 53, 381-388.
- Gardner, R.W., Holzman, P.S., Klein, G.S., Linton, H.B., & Spence, D.P. Cognitive control: A study of individual consistencies in cognitive behavior. Psychological Issues, 1959, 1, 1-185.
- Gardner, R.W., Jackson, D.M., & Messick, S.J. Personality organization in cognitive controls and intellectual abilities. Psychological Issues, 1960, 2, 1-148.
- Gardner, R.W., Lohrenz, L.J., & Schoen, R.A. Cognitive control of differentiation in the perception of persons and objects. Perceptual and Motor Skills, 1968, 26, 311-330.
- Gardner, R.W., & Moriarty, A.E. Personality development at preadolescence. Seattle, WA.: University of Washington Press, 1968.
- Gardner, R.W., & Schoen, R.A. Differentiation and abstraction in concept formation. Psychological Monographs, 1962, 76, (41, Whole No. 560).
- George, E.R., & Hofmann, M.A. Instrument flight preference and field dependence. Fort Rucker, Alabama: Army Aeromedical Research Laboratory, 1974.
- Gilley, D.V., & French, R.L. Personal learning styles: Exploring the individual's sensory input processes. (ERIC Document Reproduction Service No. ED 124504)
- Gillies, J., & Bauer, R. Cognitive style and perception of success and failure. Perceptual and Motor Skills, 1971, 33, 839-842.
- Globerson, T.G. Field independence, information processing capacity, and mental effort (Doctoral dissertation, University of California, Berkeley, 1976).
- Golden, C.J. A group version of the Stroop Color-Word Test. Journal of Personality Assessment, 1975, 39, 386-388.
- Goodenough, D.R. A review of individual differences in field dependence as a factor in auto safety. Human Factors, 1976, 18, 53-62.

- Goodenough, D.R. The role of individual differences in field dependence as a factor in learning and memory. Psychological Bulletin, 1976, 83, 675-694.
- Goodenough, D.R., & Eagle, C.J. A modification of the Embedded Figures Test for use with young children. Journal of Genetic Psychology, 1963, 103, 67-74.
- Goodenough, D.R., & Karp, S.A. Field dependence and intellectual functioning. Journal of Abnormal and Social Psychology, 1961, 63, 241-246.
- Goodenough, D.R., & Witkin, H.A. Origins of the field dependent and field independent cognitive styles. Princeton, N.J.: Educational Testing Service, 1977.
- Gordon, O.J., & Tikofsky, R.S. Performance of Brain-damaged subjects on Gottschaldt's Embedded Figures. Perceptual and Motor Skills, 1961, 12, 170-185.
- Gordon, O.J., & Tikofsky, R.S. Personality variables and the perception of embedded figures. Perceptual and Motor Skills, 1961, 12, 195-202.
- Gottesman, M. A comparative study of Piaget's developmental schema of sighted children with that of a group of blind children. Child Development, 1971, 42, 573-580.
- Gough, H.G., & McGurk, E. A group test of perceptual acuity. Perceptual and Motor Skills, 1967, 24, 1107-1115.
- Gray, J.L., & Knief, L.M. The relationship between cognitive style and school achievement. Journal of Experimental Education, 1975, 43, 67-71.
- Greenberger, M.D. Individual differences and field dependence in the Pulfrich effect: A re-examination. Perceptual and Motor Skills, 1973, 36, 713-714.
- Grippin, P.C. Field independence and reflection-impulsivity as mediators of performance on a programmed learning task with and without strong prompts (Doctoral dissertation, State University of New York at Albany, 1972). Dissertation Abstracts International, 1973, 34, 2387A. (University Microfilms No. 73-19674)
- Grippen, P.C., & Ohnmacht, F.W. Relationship of field independence and dogmatism with a hierarchically arranged concept learning task. Perceptual and Motor Skills, 1972, 34, 983-986.

- Grippin, P.C., & Ohnmacht, F.W. Field independence and dogmatism as mediators of performance on a programmed learning task with and without strong prompts. (ERIC Document Reproduction Service No. ED 095220, 1974)
- Gross, F.S. The role of set in perception of the upright. Journal of Personality, 1959, 27, 95-103.
- Gross, S.J., & Moore, S.F. The portable Rod and Frame Test and the short-form Embedded Figures Test: A combined index of the field-dependence dimension. Psychonomic Science, 1970, 20, 213-214.
- Gruen, A. A critique and re-evaluation of Witkin's perception and perception-personality work. Journal of General Psychology, 1957, 56, 73-93.
- Gruenfeld, L.W., & Arbuthnot, J. Field independence as a conceptual framework for prediction of variability in ratings of others. Perceptual and Motor Skills, 1969, 28, 31-44.
- Gruenfeld, L.W., & MacEachron, A.E. A cross-national study of cognitive style among managers and technicians. International Journal of Psychology, 1975, 10, 27-55.
- Gruenfeld, L.W., & MacEachron, A.E. Relationship between age, socioeconomic status, and field independence. Perceptual and Motor Skills, 1975, 41, 449-450.
- Gruenfeld, L.W., & Weissenberg, P. Field independence and articulation of sources of job satisfaction. Journal of Applied Psychology, 1970, 54, 424-426.
- Gruenfeld, L.W., & Weissenberg, P. Relationship between supervisory cognitive style and social orientation. Journal of Applied Psychology, 1974, 59, 386-388.
- Guilford, J.P., Green, R.F., Christensen, P.R., Hertzka, A.F., & Kettner, N.W. A factor-analytic study of Navy Reasoning Tests with the Air Force Aircrew Classification Battery: Studies of aptitudes of high-level personnel. Los Angeles, CA.: University of Southern California, 1952.
- Haenn, J.F. A conceptual model of selected parameters in categorization studies. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL, 1974. (ERIC Document Reproduction Service No. ED 095196)

- Haley, G.A. Eye movements during Rod and Frame performance. Perceptual and Motor Skills, 1973, 37, 956-958.
- Halverson, C.F., Jr. Interpersonal perception: Cognitive complexity and trait implication. Journal of Consulting Clinical Psychology, 1970, 34, 86-89.
- Handbook of adult curriculum development. Prince Alberta, Saskatchewan, Canada: Training Research and Development Station, 1974. (ERIC Document Reproduction Service No. ED 105818)
- Handel, A. Perception of verticality on a modified portable Rod and Frame Test. Perceptual and Motor Skills, 1972, 34, 459-468.
- Harano, R.M. Relationship of field dependence and motor vehicle accident involvement. Perceptual and Motor Skills, 1970, 31, 272-274.
- Haronian, F., & Sugerman, A.A. Field independence and resistance to reversal of perspective. Perceptual and Motor Skills, 1966, 22, 543-546.
- Haronian, F., & Sugerman, A.A. Fixed and mobile field independence: Review of studies relevant to Werner's dimension. Psychological Reports, 1967, 21, 41-57.
- Hardotunian, B. A note on reading and closure. The Reading Teacher, 1961, 14, 343-344.
- Harrison, A., & Nadelman, L. Conceptual tempo and inhibition of movement in black preschool children. Child Development, 1972, 43, 657-668.
- Harvey, O.J. System structure, flexibility, and creativity. In O.J. Harvey (ED.), Experience, structure and adaptability. New York: Springer, 1966.
- Harvey, O.J., Hunt, E.D., & Schroder, H.M. Conceptual systems and personality organization. New York: Wiley, 1961.
- Harvey, O.J., White, B.M., Prather, M.S., Alter, R.D., & Hoffmeister, J.K. Teachers' belief systems and preschool 57, 373-381.

- Haseth, K., Shagass, C., & Straumanis, J.J. Perceptual and personality correlates of EEG and evoked response measures. Biological Psychiatry, 1969, 1, 49-60.
- Hayes, R.W., & Venables, P.H. An exposure time effect in the Witkin Rod and Frame Test. Psychonomic Science, 1972, 28, 243-244.
- Heider, E.R. Information processing and the modification of an "impulsive conceptual tempo." Child Development, 1971, 42, 1276-1281.
- Hellkamp, D.T. Perceptual response sets on the Rod and Frame Task in a college sample. Perceptual and Motor Skills, 1968, 27, 591-594.
- Hemry, F. Effect of reinforcement conditions on a discrimination learning task for impulsive versus reflective children. Child Development, 1973, 44, 657-660.
- Herkowitz, J. Moving Embedded Figures Test. Research Quarterly, 1972, 43, 479-488.
- Hess, L., & Sperry, L. The psychology of the trainee as learner. Personnel Journal, 1973, 52, 781-785, 825.
- Hester, F.M., & Tagatz, G.E. The effects of cognitive style and instructional strategy on concept attainment. Journal of General Psychology, 1971, 85, 229-237.
- Highley, F.S. Verbal ability, quantitative ability and the Rod and Frame Test. Perceptual and Motor Skills, 1970, 30, 957-958.
- Hill, E., & Fiegenbaum, K.D. Altering field dependence through stress. Perceptual and Motor Skills, 1966, 23, 1200.
- Hirt, M., Schroeder, H., & Kaplan, M.S. A failure to provide construct validity for psychological differentiation. Personality, 1971, 2, 267-269.
- Hochman, S.H. Field independence and Stroop Color-Word performance. Perceptual and Motor Skills, 1971, 33, 782.
- Hock, H.S., Gordon, G.P., & Marcus, N. Individual differences in the detection of embedded figures. Perception and Psychophysics, 1974, 15, 47-52.

- Hoepfner, R. Current summary of structure of intellect factors and suggested tests.: Studies of aptitudes of high-level personnel. Los Angeles: University of Southern California, 1963.
- Holzman, P.S. Cognitive attitudes of leveling and sharpening in time-error assimilation tendencies (Doctoral dissertation, University of Kansas at Lawrence, 1952).
- Holzman, P.S. Relation of assimilation tendencies in visual, auditory, and kinesthetic time-error to cognitive attitudes of leveling-sharpening. Journal of Personality, 1953, 54, 375-394.
- Holzman, P.S., & Gardner, R.W. Leveling-sharpening and memory organization. Journal of Abnormal and Social Psychology, 1960, 61, 176-180.
- Holzman, P.S., & Klein, G.S. Cognitive system principles of leveling-sharpening: Individual differences in visual time-error assimilation effects. Journal of Psychology, 1954, 37, 105-122.
- Holzman, P.S., & Klein, G.S. The "schematizing process": Attitudes in sensitivity to change. American Psychologist, 1959, 5, 312.
- Houston, B.K. Field independence and performance in distraction. Journal of Psychology, 1969, 72, 65-69.
- Howell, A.D. An electroencephalographic comparison of Lowenfeld's haptic-visual and Witkin's field dependent-field independent perceptual types (Doctoral dissertation, Ball State University, 1972). Dissertation Abstracts International, 1973, 33, 4941A. (University Microfilms No. 73-06764)
- Huang, C. A cognitive approach for instructional media research. Paper presented at the Association of Educational Communications and Technology Annual Convention, Minneapolis, Minn., 1972.
- Huckabee, M.W., & Ferrell, J.G. The tactual embedded figures task as a measure of field dependence-independence in blind adolescents. Education of the Visually Handicapped, 1971, May, 37-40.

- Huckabee, M.W., & McGown, W.P. Differences between field independent and field dependent persons on the Stroop Color-Word Test: A failure to replicate. Journal of Clinical Psychology, 1971, 27, 226.
- Hunt, D., & Randhawa, B.S. Relationship between and among cognitive variables and achievement in computational science. Educational and Psychological measurement, 1973, 33, 921-128.
- Hurley, J.T. Development of group measures of the Rod and Frame Test and the slanting disc effect. Psychology, 1972, 9, 49-52.
- Thilevich, D., & Glesher, G. Relationship of defense mechanisms to field dependence-independence. Journal of Abnormal Psychology, 1971, 77, 296-302.
- Immergluck, L. Figural aftereffects, rate of "figure-ground" reversal, and field dependence. Psychonomic Science, 1966, 6, 45-46.
- Immergluck, L. Resistance to an optical illusion, figural aftereffects and field dependence. Psychonomic Science, 1966, 6, 281-282.
- Immergluck, L. Visual figural aftereffects and field dependence. Psychonomic Science, 1966, 6, 219-220.
- Immergluck, L. Comment on "figural aftereffects, illusions, and the dimension of field dependence." Psychonomic Science, 1968, 11, 363.
- Immergluck, L. Further comments on "Is the figural after-effect an aftereffect?" Psychological Bulletin, 1968, 70, 198-200.
- Immergluck, L. Individual differences in figural after-effect potency: Aftereffect trace vs. immediate stimulus context as a determiner of perception. Psychonomic Science, 1968, 10, 203-204.
- Immergluck, L. Figural aftereffects potency: A function of sex or field-dependence? Psychonomic Science, 1970, 18, 317-318.
- Immergluck, L., & Mearini, M.C. Age and sex differences in response to embedded figures and reversible figures. Journal of Experimental and Child Psychology, 1969, 8, 210-221.

- Irving, D.D., & Henderson, D. On the validity of the portable Rod and Frame Test. Perceptual and Motor Skills, 1971, 32, 434.
- Isakson, M., & Moore, J.W. The effects of training of analysis upon the responding style of impulsive children, 1968. (ERIC Document Reproduction No. ED 079320)
- Israel, N.R. Maintenance of attention: Leveling-sharpening differences in a randomization task. Perceptual and Motor Skills, 1970, 31, 571-581.
- Jackson, D.N. A short form of Witkin's Embedded Figures Test. Journal of Abnormal and Social Psychology, 1956, 53, 254-255.
- Jackson, D.N. Intellectual ability and mode of perception. Journal of Consulting Psychology, 1957, 21, 458.
- Jackson, D.M., Messick, S., & Myers, C.T. The role of memory and color in group and individual embedded figures measures on field independence. Princeton, N.J.: Educational Testing Service Research Buletin, 1962.
- Jackson, D.N., Messick, S., & Myers, C.J. Evaluation of group and individual forms of embedded figures measures of field independence. Education and Psychological Measurement, 1964, 24, 177-192.
- Jacobson, G.R. Effect of brief sensory deprivation on field dependence. Journal of Abnormal Psychology, 1966, 71, 115-118.
- Jacobson, G.R. Reduction of field dependence in chronic alcoholic patients. Journal of Abnormal Psychology, 1968, 73, 547-549.
- Jaspers, J.M.F. Individual cognitive structure. Proceedings of the Seventeenth International Congress of Psychology. Amsterdam: North-Holland, 1964.
- Jobe, A.M., Beutler, L.E., Johnson, D.T., & Neville, C.W. Psychotherapy outcome as a function of cognitive style, interpersonal attraction and the A-B dichotomy. Paper presented at the meeting of the Southwestern Psychological Association, Dallas, April, 1973.

- Johnson, D.T., Neville, C.W., & Workman, S.N. Field independence and the sixteen personality factor questionnaire: A further note. Perceptual and Motor Skills, 1969, 28, 670.
- Johnson, D.T., Neville, C.W., & Workman, S.N. Expected scores on the Rod and Frame Test: Critiquing a revisit. Psychonomic Science, 1970, 20, 100-101.
- Johnson, D.T., Neville, C.W., & Buetler, L.E. Differences between Rod and Frame Test distributions of psychiatric inpatients and college students: A partial resolution. Psychonomic Science, 1972, 28, 77-78.
- Jones, J.A. Attributional and Perceptual style correlates characteristic of level of moral maturity among a group of high school students (Doctoral dissertation, Kent State University, 1973). Dissertation Abstracts International, 1974, 34, 5719A. (University Microfilms No. 74-06923)
- Jones, J.L. Field dependence-independence, reflection-impulsivity, and the internalizing-externalizing dimension in normal boys (Doctoral dissertation, University of Minnesota, 1971). Dissertation Abstracts International, 1972, 32, 6651B. (University Microfilms No. 72-14323)
- Joshi, R.T. Field dependence, anxiety and personality. Perceptual and Motor Skills, 1974, 38, 1328.
- Joyce, B., & Weil, M. Conceptual complexity, teaching style and models of teaching. Paper prepared for the National Council for the Social Studies, Boston, 1972.
- Kagan, J. Reflection-impulsivity and reading ability in primary grade children. Child Development, 1965A, 36, 609-628.
- Kagan, J. Individual differences in the resolution of response uncertainty. Journal of Personality and Social Psychology, 1965B, 2, 154-160.
- Kagan, J. Impulsive and reflective children: Significance of conceptual tempo. In J.D. Krumboltz (ED.), Learning and the educational process. Chicago: Rand McNally, 1965C, 133-161.

- Kagan, J. Body build and conceptual impulsivity in children. Journal of Personality, 1966A, 34, 118-128.
- Kagan, J. Reflection-impulsivity: The generality and dynamics of conceptual tempo. Journal of Abnormal Psychology, 1966B, 71, 17-24.
- Kagan, J. Matching familiar figures. Cambridge: J. Kagan, 1969.
- Kagan, J., & Kogan, N. Individual variation in cognitive processes. In P. Mussen (ED.), Carmichael's manual of child psychology, New York: Wiley, 1970.
- Kagan, J., & Lemkin, J. The child's differential perception of parental attributes. Journal of Abnormal and Social Psychology, 1960, 61, 440-447.
- Kagan, J., & Messer, S.B. A reply to "Some misgivings about the Matching Familiar Figures Test as a measure of reflection-impulsivity," Developmental Psychology, 1975, 11, 244-248.
- Kagan, J., Moss, H.A., & Sigel, I.E. Conceptual style and the use of affect labels. Merrill-Palmer Quarterly, 1960, 6, 261-278.
- Kagan, J., Moss, H.A., & Sigel, I.E. Psychological significance of styles of conceptualization. In J.C. Wright and J. Kagan (ED.), Basic cognitive processes in children. Monographs of the Society for Research in Child Development, 1963, 28, No. 2 (Serial No. 86)
- Kagan, J., Pearson, L., & Welch, L. Conceptual impulsivity and inductive reasoning. Child Development, 1966A, 37, 583-594.
- Kagan, J., Pearson, L., & Welch, L. Modifiability of an impulsive tempo. Journal of Educational Psychology, 1966B, 57(6), 359-365.
- Kagan, J., Rosman, B., Day, D., Albert, J., & Phillips, W. Information processing in the child: Significance of analytic and reflective attitudes. Psychological Monographs: General and Applied, 1964, 78, (Whole No. 578)

- Karp, S.A. A factorial study of overcoming embeddedness in perceptual and intellectual functioning (Doctoral dissertation, New York University, 1962). Dissertation Abstracts International, 1965, 25, 6078. (University Microfilms No. 65-01684)
- Karp, S.A. Kit of Selected Distraction Tests. Brooklyn, New York: Cognitive Tests, 1962.
- Karp, S.A. Field dependence and overcoming embeddedness. Journal of Consulting Psychology, 1963, 27, 294-302.
- Karp, S.A. Field dependence and occupational activity in the aged. Perceptual and Motor Skills, 1967, 24, 603-609.
- Karp, S.A., & Konstadt, N.L. Manual for the Children's Embedded Figures Test. Baltimore, MD.: Authors, 1963.
- Karp, S.A., & Pardes, H. Psychological differentiation (field dependence) in obese women. Psychosomatic Medicine, 1965, 27, 238-244.
- Karp, S.A., Silberman, L., & Winters, S.W. Psychological differentiation and socioeconomic status. Perceptual and Motor Skills, 1969, 28, 55-60.
- Karp, S.A., Winter, S., & Pollack, I.W. Field dependence among diabetics. Archives of General Psychiatry, 1969, 21, 72-76.
- Katz, J.N. Reflection-impulsivity and color form sorting. Child Development, 1971, 42, 745-754.
- Kelly, G.A. The psychology of personal constructs. Vol. I. New York: Norton, 1955.
- Kennedy, R.S. Motion sickness questionnaire and field independence scores as predictor of success in Naval Aviation Training. Aviation, Space and Environmental Medicine, 1975, 1349-1352.
- Keogh, B.K., & Tardo, K. Measurement of field independence-dependence in children: A methodological note. Perceptual and Motor Skills, 1975, 40, 743-746.
- Keogh, B.K., & Donlon, G.M. Field dependence, impulsivity and learning disabilities. (ERIC Document Reproduction Service No. 059041, 1972)

- Kidd, A.H., & Rivoire, J.L. The correlation between level of field dependence and the elevation of MMPI scale scores. Journal of Clinical Psychology, 1964, 20, 256-257.
- Kipnis, D., & Resnick, J.H. Experimental prevention of underachievement among intelligent impulsive college students. Philadelphia, PA: Temple University, 1969. (ERIC Document Reproduction Service No. ED 039842)
- Klein, G. Cognitive control and motivation. In G. Lindzey (ED.), Assessment of Human Motives. New York: Rinehart, 1958.
- Klein, G.S., Garner, R.W., & Schlesinger, H.J. Tolerance for unrealistic experiences: A study of the generality of a cognitive control. British Journal of Psychology, 1962, 53, 41-55.
- Klein, G.S., & Schlesinger, H.J. Perceptual attitudes toward instability. I: Prediction of apparent movement experiences from Rorschach responses. Journal of Personality, 1951, 19, 289-302.
- Klein, R.E., Freeman, H.E., & Millett, R. Psychological test performance and indigenous conceptions of intelligence. Journal of Psychology, 1973, 84, 219-222.
- Koff, R.H. The definition of a cognitive control principle: A case of diminishing returns. Stanford, CA: Stanford University, Stanford Center for Research and Development in Teaching, 1967. (ERIC Document Reproduction Service No. 024057)
- Kogan, N. Educational implications of cognitive styles. In G.S. Lesser (ED.), Psychology and educational practice. Glenview, Illinois: Scott, Foresman, and Company, 1971.
- Kogan, N., & Wallach, M. Risk taking. New York: Holt, Rinehart and Winston, 1964.
- Kopfstein, D. Risk-taking behavior and cognitive style. Child Development, 1973, 44, 190-192.
- Kopfstein, D. Risk-taking behavior in children. Paper presented at the Annual Meeting of the Southeastern Psychological Association, Atlanta, GA, 1972. (ERIC Document Reproduction Service No. ED 069408)

- Koran, M.L., Snow, R.E., & McDonald, F.J. Teacher aptitude and observational learning of a teaching skill. Journal of Educational Psychology, 1971, 62, 219-228.
- Kreitlow, B.W. Basic explorations in adult re-education, a terminal report from the adult re-education project. Madison Wisc.: Wisconsin University, Madison Research and Development Center for Cognitive Learning, 1970. (ERIC Document Reproduction Service No. ED 042991)
- Kress, G., & Cross, J. Visual and tactual interaction in judgements of the vertical. Psychonomic Science, 1969, 14, 165-166.
- Kuusinen, J., & Mystedt, L. Individual versus provided constructs, cognitive complexity, and extremity of ratings in person perception. Stockholm Sweden: Stockholm University, Psychological Labs, 1972. (ERIC Document Reproduction Service No. 085411)
- Lackey J.N. The effects of field dependence-independence upon the time estimation of an auditory stimulus in differential prevailing fields (Doctoral dissertation, University of Texas at Austin, 1971). Dissertation Abstracts International, 1972, 33, 465B. (University Microfilms No. 72-19621)
- Lasry, J., & Dyne, L. Administration procedures and correlations between Witkin's test of field dependence. Perceptual and Motor Skills, 1974, 38, 216-218.
- Lawson, A.E. Formal operations and field independence in a heterogeneous sample. Perceptual and Motor Skills, 1976, 42, 981-982.
- Lee, L.C., Kagan, J., & Rabson, A. Influence of a preference for analytic categorization upon concept acquisition. Child Development, 1963, 34, 433-442.
- Lefcourt, H.M., & Telegdi, M.S. Perceived locus of control and field dependence as predictors of cognitive activity. Journal of Consulting and Clinical Psychology, 1971, 37, 53-56.
- Lester, G. The Rod and Frame Test: Some comments on methodology. Perceptual and Motor Skills, 1968, 26, 1307-1314.

- Lester, G. Comparison of five methods of presenting the Rod and Frame Test. Perceptual and Motor Skills, 1969, 29, 147-151.
- Lester, G. Subjects' assumptions and scores on the Rod and Frame Test. Perceptual and Motor Skills, 1971, 32, 205-206.
- Leventhal, H., & Singer, D.L. Cognitive complexity, impression formation, and impression change. Journal of Personality, 1964, 32, 210-226.
- Levine, F.J. A reply to Wolitzky's "Note on Color-Word Test performance and drive regulation in three vocational groups." Journal of Consulting and Clinical Psychology, 1971, 36, 294-295.
- Lewinsohn, P.M., Filippo, J.R., & Sergquist, W.H. Leveling-sharpening: Its relation to repression sensitization and memory, Psychology Reports, 1970, 27, 211-214.
- Lewis, M., Rousch, M., Goldberg, S., & Dodd, C. Error, response time and IQ: Sex differences in cognitive style of preschool children. Perceptual and Motor Skills, 1971, 33, 1006.
- Little, B.R. Sex differences and comparability of three measures of cognitive complexity. Psychological Report, 1969, 24, 607-609.
- Liverman, C.A. Relations between reflectivity-impulsivity and field dependence-independence and these dimensions as correlates of self concept in children. Paper presented at the Meeting of the American Educational Research Association, Washington, D.C., 1975.
- Lockheed, M.E. Cognitive style effects on sex status in student work groups. Princeton, N.J.: Educational Testing Service, 1976. (ETS RB 76-18)
- Long, G.M. Field dependency-independency: A review of the literature. Pensacola, Florida: Naval Aerospace Medical Research Laboratory, Naval Aerospace Medical Institute, 1972.
- Long, G.M. The Rod and Frame Test: Further comments on methodology. Perceptual and Motor Skills, 1973, 36, 624-626.

- Long, G.M. Rod and Frame Test performance among Naval Aviation personnel. Perceptual and Motor Skills, 1975, 41, 950.
- Long, G.M., Ambler, R.K., & Guedry, F.E. Relationship between perceptual style and reactivity to motion. Journal of Applied Psychology, 1975, 60, 599-605.
- Long, R.I. Field articulation as a factor in verbal learning and recall. Perceptual and Motor Skills, 1962, 15, 151-157.
- Lopez, L.C., Clark, P.M., & Winer, G.A. The relationship between two cognitive styles variables and the reading process. Paper presented at the Meeting of the American Educational Research Association, Washington, D.C., 1975.
- Lovano, J.J. The relation of conceptual styles and mode of perception to graphic expression. Bloomington, Indiana: Indiana University, 1969. (ERIC Document Reproduction Service No. ED 040743)
- Lowenfeld, V. The nature of creative activity: Experimental and comparative studies of visual and non-visual sources. London: Harcourt, 1939.
- Lowenfeld, V. Tests for visual and haptical aptitudes. American Journal of Psychology, 1945, 58, 100-112.
- Lowenfeld, V. Creative and mental growth, 3rd. Edition. New York: MacMillan Company, 1957.
- Lowenfeld, V., & Brittain, W.L. Creative and mental growth, 5th Edition. New York: MacMillan Company, 1970.
- Lupfer, M., & Jones, M. Risk taking as a function of skill and chance orientations. Psychological Reports, 1971, 28, 27-33.
- Mackinnon, D.W., Critchfield, R.S., Barron, F., Block, J., Gough, H.G., & Harris, R.E. An assessment study of Air Force officers. Wright Air Development Center, Texas: Personnel Laboratory, Research and Development Command, 1958.
- Mager, R.F., & Beach, K.M., Jr. Developing vocational instruction. Belmont, CA: Lear Siegler Inc., Education Division, 1967. (ERIC Document Reproduction Service No. ED 069876)

- Maginn, M.D. The effects of cognitive style on criterion test performance of high school students after instruction by audio tape treatments differing in rate and difficulty level (Doctoral dissertation, University of Southern California, 1975). Dissertation Abstracts International, 1975, 36, 3518A. (University Microfilms No. 75-28641)
- Mahler, W.R. The special devices used in the Pensacola Pilot Candidate Selection Research Program. New York: Division of Bio-mechanics, The Psychological Corporation, 1948.
- Mansueto, C.S., & Adevai, G. Development and evaluation of a portable Rod and Frame Test. Journal of Psychosomatic Research, 1967, 11, 207-211.
- Marino, D.R., Fitzgibbons, D.J., & Mirabile, C.S. Attention deployment in field dependence and autokinetic movement. Perceptual and Motor Skills, 1970, 31, 155-158.
- Markus, E.J. Perceptual field dependence among aged persons. Perceptual and Motor Skills, 1971, 33, 175-178.
- Markus, E.J., & Nielsen, M. Embedded Figures Test scores among five samples of aged persons. Perceptual and Motor Skills, 1973, 36, 455-459.
- Marlowe, D. Some psychological correlates of field independence. Journal of Consulting Psychology, 1958, 22, 334.
- Martens, K. Cognitive style: An introduction with annotated bibliography. Paper presented at the American College Personnel Association Convention, Atlanta, GA, 1975. (ERIC Document Reproduction Service No. ED 104498)
- Massari, D.J. The relation of reflection-impulsivity to field dependence-independence and internal-external control in children. Journal of Genetic Psychology, 1975, 126, 61-67.
- Massari, K.J., & Massari, J.A. Sex differences in the relationship of cognitive style and intellectual functioning in disadvantaged preschool children. Journal of Genetic Psychology, 1973, 122, 175-181.

- McCain, F., Jr., & Brown, L.D. The effect of cognitive style in verbal and pictorial concept formation tasks. Paper presented at the American Educational Research Association Conference, Los Angeles, CA, 1969. (ERIC Document Reproduction Service No. ED 030553)
- McDaniel, E.D. Ten motion picture tests of perceptual abilities. Perceptual and Motor Skills, 1973, 36, 755-759.
- McDaniel, E.D. Development of a group test for assessing perceptual abilities. Perceptual and Motor Skills, 1974, 39, 669-670.
- McGurk, E. Susceptibility to visual illusions. Journal of Psychology, 1965, 61, 127-143.
- McIntire, W.G., & Dreyer, A.S. Relationship of cognitive style to locus of control. Perceptual and Motor Skills, 1973, 37, 553-554.
- McKay, R.W. Overcoming the effect of embedding contexts: The concurrent validity of a new test of perceptual field dependence. Unpublished Master's Thesis, University of Strathclyde, 1975.
- McKinney, J.D. Problem-solving strategies in reflective and impulsive children. British Journal of Educational Psychology, 1975, 45, 327-329.
- McKinney, J.D. Teacher perceptions of the classroom behavior of reflective and impulsive children. Psychology in the Schools, 1975, 12, 348-352.
- McNally, L. The effect of instruction on learning. Paper presented at the American Educational Research Association, New Orleans, LA, 1973. (ERIC Document Reproduction Service No. ED 075735)
- McNary, S., Michael, W.B.S., Richards, L., & Lovell, C. Interrelationships among psychological measures of cognitive style and fantasy predisposition in a sample of 100 children in the fifth- and sixth-grades. Educational and Psychological Measurement, 1975, 35, 477-485.
- McWhinnie, H.J. A review of recent literature in perceptual/cognitive style with implications for theory and research in art education. Studies in Art Education, 1969, 11, 31-38.

- Mebane, D., & Johnson, D.L. A comparison of the performance of Mexican boys and girls on Witkin's cognitive tasks. Interamerican Journal of Psychology, 1970, 4(3), 277-239.
- Meichenbaum, D.H. The nature and modification of impulsive children: Training impulsive children to talk to themselves. Ontario, Canada: Waterloo University, 1971. (ERIC Document Reproduction Service No. ED 073834)
- Melamed, L.E., Wallace, B., Cohen, R.R., & Oakes, S. Correction effect in visual adaptation as a measure of field independence-dependence. Perceptual and Motor Skills, 1972, 34, 554.
- Melton, A.W. Apparatus Tests. Washington, D.C.: Army Air Forces Aviation Psychology Program Research, 1947.
- Meskin, B.B., & Singer, J.L. Daydreaming, reflective thought, and laterality of eye movements. Journal of Personality and Social Psychology, 1974, 30, 64-71.
- Messer, S.B. The effect of anxiety over intellectual performance on reflective and impulsive children (Doctoral dissertation, Harvard University, 1968).
- Messer, S.B. The effect of anxiety over intellectual performance on reflection-impulsivity in children. Child Development, 1970, 41, 723-735.
- Messer, S.B. Reflection-impulsivity: Stability and school failure. Journal of Educational Psychology, 1970, 61, 487-490.
- Messer, S.B. Reflection-impulsivity: A review. Psychological Bulletin, 1976, 6, 1026-1052.
- Messick, S. The criterion problem in the evaluation of instruction: Assessing possible, not just intended outcomes. Educational Testing Services Research Bulletin, 1969. (ERIC Document Reproduction Service No. ED 030987)
- Messick, S. Measures of cognitive styles and personality and their potential for educational practice. In K. Ingendamp (ED.), Developments in Educational Testing. London: University of London Press, 1969.
- Messick, S., & Damarin, F. Cognitive styles and memory for faces. Journal of Abnormal and Social Psychology, 1964, 69, 313-318.

- Messick, S., & Kogan, N. Differentiation and compartmentalization in object-sorting measures of categorizing style. Perceptual and Motor Skills, 1963, 16, 47-51.
- Messick, S., & Kogan, N. Category width and quantitative aptitude. Perceptual and Motor Skills, 1965, 20, 493-497.
- Miller, P.L. Cognitive and motor aspects of impulsivity (Doctoral dissertation, University of Rochester, 1969). Dissertation Abstracts International, 1970, 30, 4363B. (University Microfilms No. 70-02892)
- Minard, J.G. Frame disappearance and Rod and Frame Test performance. Perceptual and Motor Skills, 1967, 24, 616.
- Minard, J.G., Mooney, W., & Vaughan, O. Percept maintenance: Six papers on the frame disappearance task. Perceptual and Motor Skills, 1968, 27, 1239-1259.
- Moore, C.A. Teacher styles in questioning and explaining. Stanford, CA: Stanford University, Stanford Center for Research and Development in Teaching, 1973. (ERIC Document Reproduction Service No. 087697)
- Moore, M.R. A proposed taxonomy of the perceptual domain and some suggested applications. Princeton, N.J.: Educational Testing Service, 1967. (ERIC Document Reproduction Service No. 015266)
- Morant, R.B., & Arnoff, J. Starting position, adaptation and visual framework as influencing the perception of verticality. Journal of Experimental Psychology, 1966, 71, 684-686.
- Morell, J.A. Age, sex, training, and the measurement of field dependence. Journal of Experimental Child Psychology, 1976, 22, 100-112.
- Morf, M.E., & Howitt, R. Rod and Frame Test performance as a function of momentary arousal. Perceptual and Motor Skills, 1970, 31, 703-708.
- Morrison, D., & Centers, L. Investigation of the convergent validity of different measures of cognitive style. Journal of Projective Techniques and Personality Assessment, 1969, 33, 168-172.

- Mos, L., Wardell, D., & Royce, J.R. A factor analysis of some measures of cognitive style. Multivariate Behavioral Research, 1974, 9, 47-57.
- Murdoch, P., & Van Bruggen, Y.O. Stability, generality, and change of category width. Journal of Personality, 1970, 38, 117-133.
- Murgatroyd, D., Stuart, I., & Denmark, F. Perceptual style, locus of control, and personality in urban white college students. Social Behavior and Personality, 1974, 2(2), 204-210.
- Musella, D. Perceptual-cognitive style as related to self-evaluation and supervisor rating by student teachers. Journal of Experimental Education, 1969, 37(3), 51-55.
- Nadien, M., Schaeffer, D.S., & Schmeidler, G.R. Mood as a confounding variable in eye dominance, field dependence and reading. Perceptual and Motor Skills, 1969, 29, 277-278.
- Nebelkopf, E.B., & Dreyer, A.S. Perceptual structuring: Cognitive style differences in the perception of ambiguous stimuli. Perceptual and Motor Skills, 1970, 30, 635-639.
- Nevelkopf, E.B., & Dreyer, A.S. Continuous-discontinuous concept attainment as a function of individual differences in cognitive style. Perceptual and Motor Skills, 1973, 36, 655-662.
- Neimark, E.D. Longitudinal development of formal operations thought. Genetic Psychology Monographs, 1975, 91, 171-225.
- Nelson, B.A. Effects of the analytic-global and reflective-impulsivity cognitive styles on the acquisition of geometry concepts presented through emphasis or no emphasis and discovery or expository lessons. Madison, Wisc.: University of Wisconsin, Wisconsin Research and Development Center for Cognitive Learning, 1972.
- Nelson, B.A. Research on learning styles: Needs and specifications. Madison, Wisc.: University of Wisconsin, Wisconsin Research and Development Center for Cognitive Learning, 1973.

- Nelson, B.A. The effects of the analytic-global and reflectivity-impulsivity cognitive styles on the acquisition of selected geometry concepts. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, 1973.
- Neville, C.W., Workman, S.N., & Johnson, D.T. Expected scores in the Rod and Frame Test: Field dependence is where you find it. Psychonomic Science, 1969, 15, 321-322.
- Newbigging, P.L. The relationship between reversible perspective and embedded figures. Canadian Journal of Psychology, 1954, 8, 203-208.
- Nidorf, L.J., & Argabrite, A.H. Cognitive complexity and the tendency to make extreme judgements. Perceptual and Motor Skills, 1970, 31, 478.
- Nihlen, A.S. Assumptions about female learning styles and some implications of teaching. Council on Anthropology and Education Quarterly, 1975, 6, 6-8.
- Nisbett, R.E., & Temoshok, L. Is there an "external" cognitive style? Journal of Personality and Social Psychology, 1976, 33, 36-47.
- Norris, R.A., Riner, M.H., & Armstrong, T. Alternatives for individualized biology: The importance of cognitive style and conceptual complexity. American Biology Teacher, 1975, 37(5), 291-297.
- Nuessle, W. Reflectivity as an influence on focusing behavior of children. Journal of Experimental Child Psychology, 1972, 14, 265-276.
- Odom, R.D., McIntyre, C.W., & Neal, G.S. The influence of cognitive style on perceptual learning. Child Development, 1971, 42(3), 883-891.
- Ogunyemi, E.L. Cognitive styles and student science achievement in Nigeria. Journal of Experimental Education, 1973, 42(1), 59-63.
- Ohnmacht, F.W. Teacher characteristics and their relationship to some cognitive styles. Journal of Educational Research, 1967, 60, 201-204.

- Ohnmacht, F.W. Psycholinguistic research: A psychometric point of view. Journal of Reading Behavior, 1970, 2(3), 213-220.
- Olson, P.L. Aspects of driving performance as a function of field dependence. Journal of Applied Psychology, 1974, 59, 192-196.
- Olson, R.S., Diehm, D.F., & Elfner, L.F. Some factors affecting the perception of verticality. Psychological Record, 1965, 15, 51-55.
- Oltman, P.K. Field dependence and arousal. Perceptual and Motor Skills, 1964, 19, 441.
- Oltman, P.K. A portable Rod and Frame apparatus. Perceptual and Motor Skills, 1968, 26, 503-506.
- Oltman, P.K. Comment of "RFT stability or failure to arouse?" Perceptual and Motor Skills, 1969, 28, 556.
- Oltman, P.K. Field independence and extent of lateralization. In B.D. Cohen (Chair), Psychophysiological studies of field dependence-independence. Symposium presented at the Meeting of the American Psychological Association, Washington, D.C., 1976.
- Oltman, P.K., & Capobianco, F. Field dependence and eye dominance. Perceptual and Motor Skills, 1967, 25, 645-646.
- Oltman, P.K., Ehrlichman, H., & Cox, P.W. Visual asymmetry in the perception of faces and field independence. Princeton, N.J.: Educational Testing Service, 1976. (ETS RB 76-13)
- Oltman, P.K., Goodenough, D.R., Witkin, H.A., Freedman, N., & Friedman, F. Psychological differentiation as a factor in conflict resolution. Journal of Personality and Social Psychology, 1975, 32, 730-736.
- Osipow, S.H. Cognitive styles and educational-vocational preferences and selection. Journal of Counseling Psychology, 1969, 16, 534-546.
- Otto, C.P., & Glaser, R.O. The management of training: A handbook for training and development personnel. Reading, Mass.: Addison-Wesley Publishing Company, 1970. (ERIC Document Reproduction Service No. ED 042102)

- Paivio, A., Simpson, H.M., & Rogers, T.B. Occipital alpha activity of high and low visual imagers during problem solving. Psychonomic Science, 1967, 8, 212-215.
- Palmer, R.D. Dimensions of differentiation on handedness. Journal of Clinical Psychology, 1974, 30, 545-552.
- Pande, C.G. Performance of a sample of Indian students on a test of field dependence. Indian Journal of Experimental Psychology, 1970, 4, 46-50.
- Pande, C.G. Sex differences in field dependence: Confirmation with Indian sample. Perceptual and Motor Skills, 1970, 31, 70.
- Pargman, D. Visual disembedding and injury in college football players. Perceptual and Motor Skills, 1976, 42, 762.
- Pargman, D., Bender, P., & Deshies, P. Correlation between visual disembedding and basketball shooting by male and female varsity college athletes. Perceptual and Motor Skills, 1975, 41, 956.
- Pargman, D., Schreiber, L.E., & Stein, F. Field dependence and selected athletic sub-groups. Medicine and Science in Sports, 1974, 6, 283-286.
- Park, C.W., & Sheth, J.N. Impact of prior familiarity and cognitive complexity on information processing rules. Communication Research, 1975, 2, 260-266.
- Pascual-Leone, J. Piaget's period of concrete operations and Witkin's field dependence: A study on college students and children. Paper presented at the Meeting of the Canadian Psychological Association, Montreal, 1966.
- Pelletier, K.R. Influence of transcendental meditation upon autokinetic perception. Perceptual and Motor Skills, 1974, 39, 1031-1034.
- Pendleton, J.M.K. Mathematical attainment of sixth-grade students in relation to their cognitive styles (Doctoral dissertation, University of Texas at Austin, 1972). Dissertation Abstracts International, 1973, 33. (University Microfilms No. 73-7617).

- Perez, R.C. The effect of experimentally induced failure, self-esteem, and sex on cognitive differentiation. Journal of Abnormal Psychology, 1973, 81, 74-79.
- Petersen, S., & Magero, P.A. Reading and field dependence: A Pilot study. Journal of Reading, 1969, 12, 287-294.
- Pettigrew, T.F. The measurement and correlates of category width as a cognitive variable. Journal of Personality, 1958, 26, 532-544.
- Pillsbury, J.A., Meyerowitz, S., Salzman, L.F., & Satran, R. Electroencephalographic correlates of perceptual style: Field orientation. Psychosomatic Medicine, 1967, 29, 441, 449.
- Pizzamiglio, L. Handedness, ear-preference, and field-dependence. Perceptual and Motor Skills, 1974, 38, 700-702.
- Pizzamiglio, L. Psychophysiological studies of field dependence-independence. (Chair) In B.D. Cohen, Field dependence and brain organization. Symposium presented at the Meeting of the American Psychological Association, Washington, D.C., 1976.
- Pizzamiglio, L. Cognitive approach to hemispheric dominance: Learning disabilities. In R.M. Knights & D.J. Bakker (ED.), The neuropsychology of learning disorders: Theoretical approaches. Baltimore, MD.: University Park Press, 1976.
- Platt, D., Holzman, P.S., & Larson, D. Individual consistencies in kinesthetic figural aftereffects. Perceptual and Motor Skills, 1971, 32, 787-795.
- Plomin, R., & Willerman, L. A cotwin control study and a twin study of reflection-impulsivity in children. Journal of Educational Psychology, 1975, 67, 537-543.
- Poe, C.A., & Bartz, W.H. Cognitive style, personal needs and academic achievement. Speech presented at the American Personnel and Guidance Association Convention, Detroit, Mich., 1968. (ERIC Document Reproduction Service No. ED 021298)
- Pohl, R.L., & Pervin, L.A. Academic performance as a function of task requirements and cognitive style. Psychological Reports, 1968, 22, 1017-1020.

- Powell, B.J. A study of the perceptual field approach of normal subjects and schizophrenic patients under conditions of an aversive stimulus (Doctoral dissertation, Washington University, 1964). Dissertation Abstracts International, 1965, 26, 1173. (University Microfilms No. 65-06815)
- Pressey, A.W. Field dependence and susceptibility to the Poggendorf illusion. Perceptual and Motor Skills, 1967, 24, 309-310.
- Pressey, A.W. A reply to comments on "Figural aftereffects, illusions and the dimension of field dependence." Psychonomic Science, 1968, 11, 364.
- Preston, M.S., & Lambert, W.E. Interlingual interference in a bilingual version of the Stroop Color-Word Task. Journal of Verbal Learning and Verbal Behavior, 1969, 8(3), 1, 295-301.
- Ramirez III, M. Cognitive styles and cultural democracy in education. Social Science Quarterly, 1973, 53(4), 895-904.
- Ramirez III, M., Castaneda, A., & Herold, P.L. The relationship of acculturation to cognitive style among Mexican Americans. Journal of Cross-Cultural Psychology, 1974, 5(4), 424-433.
- Ramirez III, M. & Price-Williams, D.R. Cognitive styles of children of three ethnic groups in the United States. Journal of Cross-Cultural Psychology, 1974, 5(2), 212-219.
- Rand, G., Wafner, S. Ontogenetic changes in the identification of simple forms in complex contents. Human Development, 1969, 12, 154-168.
- Rawan, H.R. The effect of age, sex, intelligence, and social class on children's moral judgements: An examination of Piaget's theory in cross-cultural perspective (Doctoral dissertation, Columbia University, 1974). Dissertation Abstracts International, 1975, 35, 4259A. (University Microfilms No. 74-28525)
- Reed, S.C. Some relationships between conceptual complexity and mental abilities. Princeton, N.J.: Educational Testing Service, 1966. (Research Bulletin 66-33)

- Reed, S.K., & Johnson, J.A. Detection of parts in patterns and images. Memory and Cognition, 1975, 3, 569-575.
- Reighard, P.B., & Johnson, D.T. Effects of birth order and sex on field independence-dependence. Perceptual and Motor Skills, 1973, 37, 223-226.
- Reilly, D.H., & Sugerman, A.A. Conceptual complexity and psychological differentiation in alcoholics. Journal of Nervous and Mental Disease, 1967, 144, 14-17.
- Reinert, H. One picture is worth a thousand words? Not necessarily. Modern Language Journal, 1976, 60, 160-168.
- Reuder, M.E., & Friedlander, L. Equivalency of a portable and standard Rod and Frame apparatus--implications for operational definition of field dependency. Journal of General Psychology, 1975, 93, 301-302.
- Reynolds, R.J. Classroom verbal interaction patterns as a function of instructor cognitive complexity. Journal of Teacher Education, 1970, 21(1), 59-63.
- Richardson, L., & Soucar, E. Comparison of cognitive complexity with achievement and adjustment: A convergent-discriminant study. Psychological Reports, 1971, 29(3), 1087-1090.
- Ridberg, E.H., Parke, R.D., & Hetherington, E.M. Modification of impulsive and reflective cognitive styles through observation of film-mediated models. Developmental Psychology, 1971, 5, 369, 377.
- Riechmann, S.W., & Grasha, A.F. A rational approach to developing and assessing the construct validity of a student learning style scales instrument. Journal of Psychology, 1974, 87, 213-223.
- Robinson, J.E., & Gray, J.L. Cognitive style as a variable in school learning. Journal of Educational Psychology, 1974, 66, 793-799.
- Rosenfeld, J.J. Mathematical ability as a function of perceptual field dependence and certain personality variables (Doctoral dissertation, University of Oklahoma, 1958). Dissertation Abstracts International, 1958, 19, 880. (University Microfilms No. 58-03878)

- Roth, S.P. A correlational study of three measures of field independence-dependence. Unpublished Masters Thesis, University of California at Los Angeles, 1970.
- Rouse, M.J.D. A comparison of Witkin's and Lowenfeld's theories of perceptual orientation (Doctoral dissertation, Stanford University, 1963). Dissertation Abstracts International, 1964, 25, 329. (University Microfilms No. 64-05588)
- Rouse, M.J.D. A new look at an old theory: A comparison of Lowenfeld's "haptic-visual" theory with Witkin's perceptual theory. Studies in Art Education, 1965, 7, 42-55.
- Runkel, P.J., & Damrin, D.E. Effects of training and anxiety upon teachers' preference for information about students. Journal of Educational Psychology, 1961, 52, 254-261.
- Saarni, C.I. Piagetian operations and field independence as factors in children's problem-solving performance. Child Development, 1973, 44, 338-345.
- Sack, S.A., & Rice, C.E. Selectivity, resistance to distraction and shifting as three attentional factors. Psychological Reports, 1974, 34, 1003-1012.
- Santostefano, S.G. Developmental study of the cognitive control "leveling-sharpening." Merrill-Palmer Quarterly, 1964, 10, 343-360.
- Santostefano, S.G. Cognitive controls versus cognitive styles: An approach to diagnosing and treating cognitive disabilities in children. Seminars in Psychiatry, 1969, 1, 291-317.
- Santostefano, S.G. A biodevelopmental approach to clinical child psychology: Cognitive controls and cognitive center therapy. New York: Wiley, 1978.
- Santostefano, S.G., & Paley, E. Development of cognitive controls in children. Child Development, 1964, 35, 939-949.
- Santostefano, S.G., Rutledge, L., & Randall, D. Cognitive styles and reading disability. Psychology in the Schools, 1965, 2, 57-62.

- Satterly, D.J. Cognitive styles, spatial ability, and school achievement. Journal of Educational Psychology, 1976, 68, 36-42.
- Satterly, D.J., & Brimer, M.A. Cognitive styles and school learning. British Journal of Educational Psychology, 1971, 41, 294-303.
- Schimek, J.G. Cognitive style and defenses: A longitudinal study of intellectualization and field independence. Journal of Abnormal Psychology, 1968, 73, 575-580.
- Schleifer, M. Moral judgements of children (Doctoral dissertation, McGill University, 1971). Dissertation Abstracts International, 1972, 33, 452B.
- Schleifer, M., & Douglas, V.I. Moral judgements, behavior and cognitive style in young children. Canadian Journal of Behavioural Science, 1973, 5, 133-144.
- Schneider, G.A., & Giambra, L.M. Performance in concept identification as a function of cognitive complexity. (ERIC Document Reproduction Service No. ED 044710)
- Schroder, H.M., Driver, M.J., & Streufert, S. Human information processing. New York: Holt, Rinehart, and Winston, 1967.
- Schuck, J.R., Cross, H.A., & Mills, D.H. A signal detection analysis of the Rod and Frame Test. Perception and Psychophysics, 1970, 7, 276-280.
- Schwartz, D.W., & Karp, S.A. Field dependence in a geriatric population. Perceptual and Motor Skills, 1967, 24, 495-504.
- Schwebel, A.I., & Schwebel, C.R. The relationship between performance on Piagetian tasks and impulsive responding. Journal for Research in Mathematics Education, 1974, 5, 98-104.
- Scott, N.C. Zip pak for pre-primer reading level (Teacher's manual). Salinas, CA: Monterey County Office of Education. (ERIC Document Reproduction Service No. ED 119911)
- Scott, N.C. Cognitive style assessment: One test or several? Paper presented at the Annual Meeting of the American Educational Research Association, New York, 1971. (ERIC Document Reproduction Service No. ED 048355)

- Segal, S.J., & Barr, H.L. Effect of instructions on Phi phenomenon, criterion task of "tolerance for unrealistic experiences." Perceptual and Motor Skills, 1969, 29, 483-486.
- Shanks, J.L. Cognitive styles as a factor in the science achievement of pre-service elementary teachers. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Los Angeles, CA, 1975. (ERIC Document Reproduction Service No. ED 110322)
- Sherman, J.A. Problem of sex differences in space perception and aspects of intellectual functioning. Psychological Review, 1967, 74, 290-299.
- Sherman, J.A. Field articulation, sex, spatial visualization, dependency, practice, laterality of the brain and birth order. Perceptual and Motor Skills, 1974, 38, 1223-1235.
- Shipe, D. Impulsivity and locus of control as predictors of achievement and adjustment in mildly retarded and borderline youth. American Journal of Mental Deficiency, 1972, 76, 12-22.
- Shouksmith, G. A series of insoluble problems for studying cognitive style. Journal of Psychology, 1969, 73, 245-248.
- Siegel, A.W. Reflection-impulsivity (R-1): Value and limitations for understanding cognitive processes in children. (ERIC Document Reproduction Service No. ED 113680)
- Siegelman, E. Reflective and impulsive observing behavior. Child Development, 1969, 40, 1213-1222.
- Signell, K.A. Cognitive complexity in person perception and nation perception: A developmental approach. Journal of Personality, 1966, 34, 517-537.
- Silverman, A.J., Adevai, G., & McGough, W.E. Some relationships between handedness and perception. Journal of Psychosomatic Research, 1966, 10, 151-158.
- Silverman, A.J., & McGough, W.E. Epinephrine response differences in field-dependent and field-independent subjects. Biological Psychiatry, 1969, 1, 185-188.

- Silverman, A.J., & King, C. Pseudo perceptual differentiation. Journal of Consulting and Clinical Psychology, 1970, 34, 119-123.
- Slakter, A.J. Generality of risk taking on objective examinations. Educational Psychological Measurement, 1969, 29, 115-128.
- Slaughter, C.H. Cognitive style: Some implications for curriculum and instructional practices among Negro children. Journal of Negro Education, 1969, 38, 105-111.
- Sloane, H.N, Garlow, L., & Jackson, D.N. Cognitive styles in equivalence range. Perceptual and Motor Skills, 1963, 16, 389-404.
- Small, M.M. Modification of performance on the Rod and Frame Test. Perceptual and Motor Skills, 1973, 36, 715-720.
- Smith, G.E. Relationships between cognitive style and instructional treatment among prospective elementary school teachers. Paper presented at the Annual Meeting of American Educational Association, New Orleans, 1973. (ERIC Document Reproduction Service No. ED 075196)
- Smith, K.M. The influence of cognitive style and intelligence variables in aided reading comprehension. Madison, Wisc.: Wisconsin University, Madison Research and Development Center for Cognitive Learning, 1973. (ERIC Document Reproduction Service No. ED 094354)
- Smith, L.M., & Kleine, P.F. Teacher awareness: Social cognition in the classroom. St. Ann, MO: Central Midwestern Regional Education Lab, 1968. (ERIC Document Reproduction Service No. ED 030609)
- Solar, D., Bruel, D., & Kovacs, J. The Draw-a-Person Test: Social conformity or artistic ability? Journal of Clinical Psychology, 1970, 26, 524-525.
- Solar, D., Davenport, G., & Bruehl, D. Social compliance as a function of field dependence. Perceptual and Motor Skills, 1969, 29, 299-306.
- Spotts, J.V., & Mackler, B. Relationships of field-dependent and field-independent cognitive styles to creative test performance. Perceptual and Motor Skills, 1967, 24, 239-268.

- Spotts, N.R. Divergent cognitive styles in academic overachievers. Glassboro, N.J.: Glassboro State College, Psychology Department, 1972. (ERIC Document Reproduction Service No. ED 079645)
- Staines, J.W. Leveling-sharpening and academic learning in secondary school children. Australian Journal of Psychology, 1968, 20, 123-127.
- Stanfiel, J.D. The jungian typology, neuroticism, and field dependence (Doctoral dissertation, Duke University, 1966). Dissertation Abstracts International, 1966, 27, 618B. (University Microfilms No. 66-07280)
- Stansell, V. Field dependence-independence and the auditory sense modality. (Masters thesis, Steven F. Austin University, 1974). Masters Abstracts, 1974, XIII, 40. (University Microfilms No. M6567)
- Stansell, V., Beutler, L.E., Neville, C.W., & Johnson, D.T. MMPI correlates of extreme field independence and field dependence in a psychiatric population. Perceptual and Motor Skills, 1975, 40, 539-544.
- Starker, S. Aspects of inner experience: Autokinesis, daydreaming, dream recall and cognitive style. Perceptual and Motor Skills, 1973, 36, 663-673.
- Steger, J.A., & Corelik, E. Field independence and anchor effectiveness. Psychonomic Science, 1970, 20, 86-87.
- Stein, F. Consistency of cognitive, interest, and personality variables with academic mastery: A study of field dependence-independence, verbal comprehension, self-perception, and vocational interests in relation to academic performance among male juniors attending an urban university (Doctoral dissertation, New York University, 1968). Dissertation Abstracts International, 1968, 29, 1429A. (University Microfilms No. 68-11809)
- Stein, N., & Frindaville, P.S. Discrimination learning and stimulus generalization by impulsive and reflective children. Journal of Experimental Child Psychology, 1976, 21, 25-39.

- Stewart, J.D. The usefulness of task analysis in the evaluation of military training. Master thesis, Naval Postgraduate School, Monterey, CA, 1970. (ERIC Document Reproduction Service No. ED 047265)
- Stewart, R.H. Birth order and dependency. Journal of Personality and Social Psychology, 1967, 6, 192-194.
- Strauss, M.E. Cognitive style and the use of incidental cues in problem solving. Journal of Psychology, 1969, 73, 69-74.
- Stuart, I.R. Perceptual style and reading ability: Implications for an instructional approach. Perceptual and Motor Skills, 1967, 24, 135-138.
- Stuart, I.R., & Murgatroyd, D. Field research model of the Rod and Frame Test. Perceptual and Motor Skills, 1971, 32, 671-674.
- Stuart, I.R., & Bronzaft, A.L. Perceptual style, test anxiety and test structure. Perceptual and Motor Skills, 1969, 30, 823-825.
- Suinn, R.M. The theory of cognitive style: A partial replication. Journal of General Psychology, 1967, 77, 11-15.
- Sweeney, D.R., & Fine, B.J. Pain reactivity and field dependence. Perceptual and Motor Skills, 1965, 21, 757-758.
- Taft, R. Some characteristics of good judges of others. British Journal of Psychology, 1956, 47, 19-29.
- Tajfel, H., Richardson, A., & Everstine, L. Individual consistencies in categorizing: A study of judgemental behavior. Journal of Personality, 1964, 32, 90-108.
- Tate, D.R.W. Modification of impulsivity in young children (Doctoral dissertation, Texas Womens University, 1975). Dissertation Abstracts International, 1976, 36, 7939A. (University Microfilms No. 76-11159)
- Templeman, K.D. A study of the relationship between the haptic and visual creative types and reading achievement in first- and sixth-grade children. Master's thesis, Cornell University, 1962.

- Templer, A.J. A study of the relationship between psychological differentiation and management style. Personnel Psychology, 1973, 26, 227-237.
- Thornell, J.G. Individual differences in cognitive style and the guidance variable in instruction. Paper presented at the Annual Meeting of the American Educational Research Association, Washington, D.C., 1974. (ERIC Document Reproduction Service No. ED 106705)
- Thornton, C.L., & Barrett, G.V. Psychological differentiation and wisc "analytical IQ," methodological note. Perceptual and Motor Skills, 1967, 25, 704.
- Ton, W.H. Perceptual style and detection of motion in depth. Perceptual and Motor Skills, 1972, 34, 423-428.
- Tripodi, T., & Bieri, J. Cognitive complexity as a function of own and provided constructs. Psychological Reports, 1963, 13, 26.
- Tripodi, T., & Bieri, J. Cognitive complexity, perceived conflict, and certainty. Journal of Personality, 1966, 34, 144-153.
- Tzeng, O.J.L. The effect of category size: Scanning or degree of learning? American Journal of Psychology, 1975, 88, 443-453.
- United States Army Air Corps, Psychological Testing Division, 1944. Successive Perception Test I. (Film)
- Valentine, E.R. Performance on two reasoning tasks in relation to intelligence, divergence and interference proneness. British Journal of Educational Psychology, 1975, 45, 198-205.
- Vannoy, J.S. Generality of cognitive complexity-simplicity as a personality construct. Journal of Personality and Social Psychology, 1965, 2, 385-396.
- Vaught, G.M. Expected scores in the Rod and Frame Test: Fuel for the Immergluck-Pressey fire. Psychonomic Science, 1968, 13, 248.
- Vaught, G.M. Correlations between scores for a portable RFT and a stationary RFT. Perceptual and Motor Skills, 1969, 29, 474.

- Vaught, G.M. A reply to comments on "RFT stability or failure to arouse?" Perceptual and Motor Skills, 1969, 29, 78.
- Vaught, G.M. Expected scores in the Rod and Frame Test revisited. Psychonomic Science, 1970, 18, 111.
- Vaught, G.M. Accounting for sex differences on the Rod and Frame Test. Perceptual and Motor Skills, 1971, 33, 1114.
- Vaught, G.M. Intratest Rod and Frame scores for females. Perceptual and Motor Skills, 1971, 33, 774.
- Vaught, G.M., & Auguston, B. Field dependence and form discrimination in females. Psychonomic Science, 1967, 7, 333-334.
- Vaught, G.M., & Bremer, B. RFT stability or failure to arouse? Perceptual and Motor Skills, 1969, 28, 378.
- Vernon, P.E. The distinctiveness of field independence. Journal of Personality, 1972, 40, 366-391.
- Vernon, P.E. Multivariate approaches to the study of cognitive styles. In J.E. Royce (ED.), Multivariate analysis and psychology. New York: Academic Press, 1973, pp. 125-148.
- Vito, L.M. Internal-external locus of control-of-reinforcement and tolerance of ambiguity as related to speed of perception of embedded figures (field dependency). Paper presented at the meeting of the Eastern Psychological Association, New York, 1971.
- Vurpillot, E. The development of scanning strategies and their relation to visual differentiation. Journal of Experimental Child Psychology, 1968, 6, 632-650.
- Wachtel, P.L. Conceptions of broad and narrow attention. Psychological Bulletin, 1967, 68, 417-429.
- Wachtel, P.L. Style and capacity in analytic functioning. Journal of Personality, 1968, 36, 202-212.
- Wachtel, P.L. Cognitive style attention and learning. Perceptual and Motor Skills, 1971, 32, 1, 315-318.

- Wachtel, P.L. Cognitive style and style of adaptation. Perceptual and Motor Skills, 1972, 35, 779-785.
- Wachtel, P.L. Field dependence and psychological differentiation: Reexamination. Perceptual and Motor Skills, 1972, 35, 179-189.
- Walker, J.T. Tactual field dependence. Psychonomic Science, 1972, 26, 311-313.
- Wallach, M.A., & Kogan, N. Modes of thinking in young children. New York: Holt, Rinehart, and Winston, 1965.
- Wallach, M.A., Kagan, N., & Burt, R.B. Group risk taking and field dependence-independence of group members. Sociometry, 1967, 30, 323-338.
- Walter, W.G. The living brain. New York: W.W. Norton and Company, 1963.
- Ward, T. Cognitive processes and learning: Reflections on a comparative study of "cognitive style" (Witkin) in fourteen African societies. Comparative Education Review, 1973, 17, 1-10.
- Wardell, D. Note on factor analysis of cognitive styles. Perceptual and Motor Skills, 1974, 38, 774.
- Warren J.R. Adapting instruction to styles of learning. ETS Findings, 1974, 1, 1-5.
- Watson, B.L. Field dependence and early reading achievement (Doctoral dissertation, University of California at Los Angeles, 1969). Dissertation Abstracts International, 1970, 31, 656A. (University Microfilms No. 70-14335)
- Weissenberg, P. Concurrent validity of Hidden Figures Test (CF-1). Perceptual and Motor Skills, 1973, 36, 460-462.
- Weissenberg, P., & Gruenfeld, L.W. Relationships among leadership dimensions and cognitive style. Journal of Applied Psychology, 1966, 50, 392-395.

- Weintraub, S.A. Cognitive and behavioral impulsivity in internalizing, externalizing and normal children (Doctoral dissertation, University of Minnesota, 1969). Dissertation Abstracts International, 1969, 30, 395B. (University Microfilms No. 69-11471)
- Wen, S. Modifying children's impulsivity through redundancy and variability training. Psychology in the Schools, 1974, 11, 440-444.
- Wenderoth, P.M. the distinction between the Rod and Frame illusion and the Rod and Frame Test. Perception, 1974, 3, 205-212.
- White, B.W. Visual and auditory closure. Journal of Experimental Psychology, 1954, 48, 234-240.
- Wicker, A. Cognitive complexity, school size, and participation in school behavior settings: A test of the frequency of interaction hypothesis. Journal of Educational Psychology, 1968, 60(3), 200-203.
- Wilde, J.E. A descriptive analysis of children's cognitive styles: Conceptual tempo and preferred mode of perceptual organization and conceptual categorization (Doctoral dissertation, Claremont Graduate School, 1973). Dissertation Abstracts International, 1974, 34, 4013A. (University Microfilms No. 74-00987)
- Wilkins, G., & Epting, F. Cognitive complexity and categorization of stimulus objects being judged. Psychological Reports, 1971, 29(3), 965-966.
- Wilkins, G., Epting, F., & Deriet, H.V. Relationship between repression-sensitization and interpersonal cognitive complexity. Journal of Consulting and Clinical Psychology, 1972, 39(3), 448-450.
- Willemsen, E., Buchholz, A., Budrow, M.S., & Geannacopulos, N. Relationship between Witkin's Rod and Frame Task and Piaget's water-line task for college women. Perceptual and Motor Skills, 1973, 36, 958.
- Wineman, J.H. Cognitive style and reading ability. California Journal of Educational Research, 1971, 22, 74-79.
- Witkin, H.A. The nature and importance of individual differences in perception. Journal of Personality, 1949, 18, 145-170.

- Witkin, H.A. Perception of the body position and of the position of the visual field. Psychological Monographs, 1949, 63, 1-46.
- Witkin, H.A. Individual differences in ease of perception of embedded figures. Journal of Personality, 1950, 19, 1-15.
- Witkin, H.A. Perception of the upright when the direction of the force acting on the body is changed. Journal of Experimental Psychology, 1952, 43, 9-20.
- Witkin, H.A. Further studies of perception of the upright when the direction of force acting on the body is changed. Journal of Experimental Psychology, 1952, 43, 9-20.
- Witkin, H.A. Comment on "the role of instruction in experimental space orientation." Journal of Experimental Psychology, 1953, 46, 135-136.
- Witkin, H.A. The perception of the upright. Scientific American, 1959, 200, 50-56.
- Witkin, H.A. A cognitive style approach to cross-cultural research. International Journal of Psychology, 1967, 2, 233-250.
- Witkin, H.A. "Embedded figures and personality:" A reply. Perceptual and Motor Skills, 1960, 11, 15-20.
- Witkin, H.A. Psychological differentiation and forms of pathology. Journal of Abnormal Psychology, 1965, 70, 317-336.
- Witkin, H.A. The role of cognitive style in academic performance and in teacher-student relations. Princeton, N.J.: Educational Testing Service, 1973. (RB 73-11)
- Witkin, H.A. & Asch, S.E. Studies in space orientation, III. Perception of the upright in the absence of a visual field. Journal of Experimental Psychology, 1948, 38, 603-614.
- Witkin, H.A. & Asch, S.E. Studies in space orientation, IV. Further Experiments on perception of the upright with displaced visual fields. Journal of Experimental Psychology, 1948, 38, 762-782.

- Witkin, H.A., Birnbaum, J., Lomonaco, S., Lehr, S., & Herman, J.L. Cognitive patterning in congenitally totally blind children. Child Development, 1968, 39, 767-786.
- Witkin, H.A., & Cox, P.W. Cognitive styles: New tool for career guidance? ETS Findings, 1975, 2, 1-4.
- Witkin, H.A., Dyk, R.B., Faterson, H.F., Goodenough, D.R., & Karp, S.A. Psychological differentiation: Studies of development. Potomac, MD.: Lawrence Erlbaum Associates, 1974. (Originally published: New York: Wiley, 1962.)
- Witkin, H.A., Faterson, H.F., Goodenough, D.R., & Birnbaum, J. Cognitive patterning in mildly retarded boys. Child Development, 1966, 37, 301-316.
- Witkin, H.A., & Goodenough, D.R. Field dependence and interpersonal behavior. Princeton, N.J.: Educational Testing Services, 1976(a). (RB 76-12)
- Witkin, H.A., & Goodenough, D.R. Field dependence and interpersonal behavior. Princeton, N.J.: Educational Testing Services, 1976(b). (RB 76-12)
- Witkin, H.A., Goodenough, D.R., & Karp, S.A. Stability of cognitive style from childhood to young adulthood. Journal of Personality and Social Psychology, 1967, 7, 291-300.
- Witkin, H.A., Lewis, H.B., Hertzman, M., Machover, K., Meissner, P.B., & Wapner, S. Personality through perception. New York: Harper and Row, 1954.
- Witkin, H.A., & Moore, C.A. Cognitive style and the teaching learning process. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL, 1974. (ERIC Document Reproduction Service No. ED 097356)
- Witkin, H.A., Moore, C.A., Goodenough, D.R., & Cox, P.W. Field-dependent and field-independent cognitive styles and their educational implications. Review of Educational Research, 1977, 47, 1-64.
- Witkin, H.A., & Wapner, S. Visual factors in the maintenance of upright posture. American Journal of Psychology, 1950, 63, 31-50.

- Wolf, A. Body rotation and the stability of field dependence. Journal of Psychology, 1965, 59, 211-217.
- Wolfe, R., Egelston, R., & Powers, J. Conceptual structure and conceptual tempo. Perceptual and Motor Skills, 1972, 35, 331-337.
- Wolk, S., & Svoboda, C.P. Task requirements and field dependence in incidental learning. Perceptual and Motor Skills, 1975, 40, 903-906.
- Woodworth, D.G., & Mackinnon, D.W. The use of trait ratings in an assessment of 100 Air Force captains. Lackland Air Force Base, Texas: Wright Air Development Center Air Research and Development Command, 1958.
- Wroczynski, R. Learning styles and lifelong education. International Review of Education, 1974, 20(4), 464-473. . . .
- Yando, R.M. Stability of reflection-impulsivity. Unpublished manuscript, Harvard University, 1968.
- Yando, R.M., & Kagan, J. The effect of teacher tempo on the child. Child Development, 1968, 39, 27-34.
- Yando, R.M., & Kagan, J. The effects of task complexity on reflection-impulsivity. Cognitive Psychology, 1970, 1, 192-200.
- Young, H.H. A test of Witkin's field-dependence hypothesis. Journal of Abnormal and Social Psychology, 1959, 59, 188-192.
- Zawacki, A. An experimental study of analytic synthetic modelings and drawings of children (Doctoral dissertation, Pennsylvania State University, 1956). Dissertation Abstracts International, 1956, 16, 1380. (University Microfilms No. 00-16737)
- Zelniker, T., Jeffery, W.E., Ault, R., & Parsons, J. Analysis and modification of search strategies of impulsive and reflective children on the Matching Familiar Figures Test. Child Development, 1972, 43, 321-325.
- Zigler, E. A measure in search of a theory. Contemporary Psychology, 1963(a), 8, 133-135.

Zigler, E. Zigler stands firm. Contemporary Psychology, 1963(b), 8, 459-461.

Zytowski, G.D., Mills, D.H., & Paepe, C. Psychological differentiation and the strong vocational interest. Journal of Counseling Psychology, 1969, 16, 41-44.

## SECTION II

### COGNITIVE STYLES

#### SELECTED ANNOTATED BIBLIOGRAPHY

Baird, R.R., & Bee, H.L. Modification of conceptual style preference by differential reinforcement. Child Development, 1969, 40, 903-910.

SUBJECT: Modification of analytic and non-analytic conceptual styles through reinforcement training.

METHOD: First- and second-grade children were pre-tested for analytic and non-analytic conceptualizing styles. Analytic and non-analytic children were randomly assigned to analytic and non-analytic training groups. During training, reinforcement---in the form of chips exchangeable for candy---was given for either analytic or non-analytic responses. The children were then post-treated for conceptualizing style.

RESULTS: Where training was consistent with pre-test performance, analytic children became even more analytic with training, but non-analytic children showed little change on the post-test. Where training was contradictory to pre-test performance, non-analytic children given analytic training showed an increase in analytic performance on the post-test, but analytic pre-test level of analytic functioning on the post-test.

Berkowitz, L. Leveling tendencies and the complexity-simplicity dimension. Journal of Personality, 1957, 25, 743-752.

SUBJECT: The author examines the relationship between leveling and the complexity-simplicity dimension of personality, hypothesizing that individuals indicating a preference for simple phenomenal experiences have strong leveling tendencies.

METHOD: Forty-six students in a college psychology course (16 males, 30 females) were given two memory tasks: In the first, students were asked to draw a series of five designs from memory after seeing them displayed in front of the class. In the second task, subjects first copied a paragraph and then tried to reproduce the paragraphs from memory. No time limits were imposed on either task. An attitude questionnaire was also administered which contained complexity and ethnocentrism scales.

RESULTS: The data were analyzed by chi-square tests. After dichotomizing each of the two leveling tendency distributions about their respective medians, a test was made of the significance of the association between the two leveling scores, yielding a chi square value of 6.67,  $p < .01$ . This suggests that the two leveling tasks are significantly related. As predicted, the complexity score was negatively related to leveling tendencies,  $\chi^2 = 7.38$ ,  $p < .05$ .

The researcher concluded from this that individuals who prefer simple phenomenal experiences achieve this simplicity by leveling.

Bieri, J., Atkins, A.L., Briar, J.S., Leaman, R.L., Miller, H., & Tripodi, T. Clinical and Social Judgement: The Discrimination of Behavioral Information. New York: Wiley, 1966.

SUBJECT: This book is a major analysis of the "differentiation" conceptualization of cognitive complexity/simplicity. The authors discuss this conceptualization, present considerable data concerning it, and explain a procedure for assessing it which is a modification of Kelly's original REP test.

Block, J., Block, J.H., & Harrington, D.M. Comment on the Kagan-Messer reply. Developmental Psychology, 1975, 2, 249-252.

SUBJECT: A response to the arguments made by Kagan and Messer in response to an article questioning the conceptualization, operationalization, validity and interpretation of reflection-impulsivity. This comment points to the fact that the researchers continue to disagree on a number of the issues raised.

Block, J., Block, J.H., & Harrington, D.M. Some misgivings about the Matching Familiar Figures Test as a measure of reflection-impulsivity. Developmental Psychology, 1974, 5, 611-632.

SUBJECT: An exploration of the discrepancy which seems to exist between Kagan's conceptualization of reflection-impulsivity and its operationalization on the Matching Familiar Figures Test. The researchers describe the discrepancy between Kagan's conceptualization of reflection-impulsivity and his operationalization of reflection-impulsivity; the construct validity of the Matching Familiar Figures Test through a literature survey is reported, and research findings are also reported.

METHOD: 100 subjects (50 boys, 50 girls), between the ages of 48 and 51 months were administered the MFF. The subjects were split into quadrants fast/accurate, fast/inaccurate, slow/accurate, slow/inaccurate, thereby accounting for all subjects. The California Child Q Set was used to develop personality characterizations for each child.

RESULTS: 61% of the subjects fall into the 2 quadrants typically analyzed in MFF research; 39% fall into the

quadrants typically called "indeterminant" and are ignored. Figures for internal consistency reliability and stability or across-time correlations are in accord with the literature. A 2 X 2 analysis of variance was used to evaluate the 100 Q items associated with MFF error, MFF latency and the interaction of MFF error and latency; 2 were significantly related to MFF latency and 32 were significantly related to MFF error. The accurates tend to be brighter, more competent and resourceful children, the inaccurates tend to be lacking in self-confidence, more rigid and less happy children. The fast/inaccurates seem to be unable to withhold their responses due to intense anxiety, a finding which contradicts Kagan's theory. It also appears that latency does not contribute as much as errors in defining this cognitive variable.

Bone, R.N., & Eysenck, H.J. Extraversion, field dependence, and the Stroop Test. Perceptual and Motor Skills, 1972, 34, 873-874.

**SUBJECT:** This study sought to supplement a personality questionnaire measuring extraversion with measures of field dependence-independence and distractibility and to determine the relationships among the scores.

**METHOD:** A student sample consisting of 97 males and 97 females, mean age 20 years, was tested. Eysenck's personality inventory measuring extraversion, neuroticism, and psychoticism was used; the field dependence test used was Witkin's Rod and Frame Test, and the Stroop Test was used to measure distractibility.

**RESULTS:** The matrices of correlations were factor analyzed using a principal components method. For men, the first factor had high loadings on the Stroop scores and, therefore, was test specific. The second factor had loadings on the three personality variables. The third factor had loadings on extraversion, field dependence, and the Stroop interference scores but negative loadings on the Stroop times scores. Women's results followed the same lines, but the results were less clear. Their field dependence scores were much higher than the men's. Loadings for extraversion, Stroop interference, and Stroop time scores were much lower than for men. In general, the researchers conclude that extroverts are field dependent, more prone to interference, and quicker to read the simple Stroop cards.

Bruning, W.A. Visual aptitude as it relates to student achievement in reading and mathematics (Doctoral dissertation, 1974). Dissertation Abstracts International, 1975, 35, 5212A. (University Microfilms No. 75-02963)

SUBJECT: Relationship between visual aptitude as measured by Lowenfeld's visual/haptic dimension and school achievement in reading and math.

METHOD: A sample of high school students were given Successive Perception Test I as a measure of their visual aptitude. Their visual aptitude scores were correlated with their scores on standardized achievement tests in reading and math.

RESULTS: Significant positive correlations were found between visual aptitude and achievement in both reading and math.

Bush, E.S., & Dweck, C.S. Reflections on conceptual tempo: Relationship between cognitive style and performance as a function of task characteristics. Developmental Psychology, 1975, 5, 567-574.

SUBJECT: The purpose of this study was to investigate whether reflective subjects would continue to show superior performance on tasks stressing speed, that is, demonstrate a flexibility of response style.

METHOD: 100 fourth grade students, 54 girls and 46 boys, were selected from a pool of 225 children based on test anxiety and conceptual tempo scores. The subjects were administered the Test Anxiety Scale for Children (TASC) and Lie Scale for Children (LSC); two weeks later the Matching Familiar Figures Test, an index of impulsivity/reflectivity, was administered. The subjects were classified as high-anxious or low-anxious, and impulsive or reflective and placed in groups as high anxious reflective, low-anxious impulsive. Two months later, each subject was tested for 20 minutes and given 3 tests that required quick decision making.

RESULTS: Separate 2 x 2 analyses of variance (anxiety x conceptual tempo) were performed for each sex on nine dependent variables. The results revealed that the high-anxious reflective performed as well as the low-anxious reflectives. It appears that the reflectives were able to adapt to the demands of the tests on both speed and accuracy better than the impulsives. This research reveals that although longer latency is a characteristic of reflective individuals, they appear to have the ability to respond quickly and accurately to tasks that stress speed.

Butler, P.A. The relationship of age, gender, analytical ability, field articulation, and leveling-sharpening to assimilation tendencies in time-error (Doctoral dissertation, University of Oklahoma, 1977). Dissertation Abstracts International, 1977, 38, 1989A. (University Microfilms No. 77-21366)

SUBJECT: This study investigated the relative contributions of age, gender, analytical ability and two cognitive controls, leveling-sharpening and field dependence-independence to time-error in a series of visual tasks of comparative judgement. It was proposed that age, gender, and analytical ability contribute to the development of the two cognitive controls which in turn contribute to the dependent variable (time-error) in an antecedent-succedent type relationship.

METHOD: The complex set of interrelationships among the independent variables was investigated by a path analysis procedure. Three multilinear regression analyses were run to determine relative contributions of the first three variables (age, gender, and analytical ability) to field articulation; the contribution of age, gender, and field articulation to leveling-sharpening; and the relative contribution of all the factors to time-error assimilation behavior.

RESULTS: The first regression analysis (within the context of a path analysis) indicated that together analytical ability and age account for 41% of the variance in field articulation. None of the other regression analyses yielded significant multiple correlation coefficients. This supports prior findings by Witkin and indicated analytical ability to be a stronger predictor than age. Possible reasons for the outcome of this study were discussed as well as possible future research.

Drewes, H. An experimental study of the relationship between electroencephalographic imagery variables and perceptual-cognitive processes (Doctoral dissertation, Cornell University, 1958). Dissertation Abstracts International, 1958, 19, 87. (University Microfilms No. 02438)

SUBJECT: Brain alpha waves as a physiological aspect of visual-haptic functioning.

METHOD: Alpha rhythms of subjects were recorded as they attempted to mentally visualize and manipulate geometric figures on a table top. Since alpha rhythm typically ceases when a visual image is seen or is induced mentally, it was concluded that those individuals who recorded persistent alpha were not

forming visual images, while those who recorded no alpha were constantly producing mental imagery. Based on alpha rhythm recordings, the subjects were divided into visualizers, nonvisualizers, and responsives. All subjects were then given a Rorschach Test.

RESULTS: The Rorschach responses of the visualizers tended to be whole and three-dimensional forms, while those of the nonvisualizers tended to be more kinesthetic and non-visual in nature.

Erickson, R.C. Visual-haptic aptitude: Effect on student achievement in reading. Journal of Learning Disabilities, 1969, 2(5), 21-25.

SUBJECT: Relationship of visual-haptic type to reading achievement.

METHOD: A group of 325 seventh grade boys from four schools were given Successive Perception Test I to determine perceptual type. Their grade-equivalent scores on the reading portion of the Iowa tests of basic skills were obtained from their school records. Anova techniques were used to examine the relationship between reading achievement level and visual-haptic indeterminate perceptual type.

RESULTS: The mean reading level of the visual group was found to be significantly greater than that of the indeterminate group. Both of these groups were found to have a higher level of reading achievement than the haptic group.

Flick, P. An intercorrelative study of two creative types: The visual type and the haptic type (Doctoral dissertation, Pennsylvania State University, 1960). Dissertation Abstracts International, 1961, 21, 2586. (University Microfilms No. 61-00035)

SUBJECT: Expression of visual and haptic nature in literary work.

METHOD: Subjects of both the visual and haptic types were asked to produce pieces of creative writing. These were then analyzed for evidence of visual and haptic expression.

RESULTS: Visuals tended to produce literary expression which was sight-oriented, objective and externally directed. Haptic expression was more kinesthetic, subjective, and internally directed.

Frick, J.W., Guilford, J.P., Christensen, P.R., & Merrigield, P.R. A factoranalytic study of flexibility in thinking. Educational and Psychological Measurement, 1959, 19, 469-495.

SUBJECT: Relationship of compartmentalization in conceptualizing style to measures of divergent thinking.

METHOD: A group of adult males were tested for compartmentalization with a sorting task. They were also tested on a group of divergent-thinking measures, such as spontaneous flexibility and idea fluency. Relationships were studied with correlational and factor analyses.

RESULTS: Subjects with high degrees of compartmentalization tended to do poorly on the divergent-thinking measures and factors. Those with more flexible and divergent thought processes tended to leave few compartmentalized stimuli when sorting, suggesting more flexible boundaries when grouping or conceptualizing the stimuli.

Friedman, R. Relationship between intelligence and performance on the Stroop Color-Word Test in second and fifth grade children. Journal of Genetic Psychology, 1971, 118, 147-148.

SUBJECT: The researcher sought to determine the relationship between performance on the Stroop Test and intelligence in young children.

METHOD: Subjects were 47 second grade and 46 fifth grade boys and girls. Mean ages were 7.8 years and 9.9 years, respectively. I.Q.'s of the second grade subjects ranged from 84 to 123, with a mean of 106. I.Q.'s of the fifth grade subjects ranged from 90 to 130 with a mean of 110.

RESULTS: On the word card, a significant correlation of  $-.34$  was found for second grade subjects ( $p < .01$ ). Significant correlations of  $-.41$  and  $-.44$  ( $p < .01$ ) were obtained for time scores and intelligence scores for the fifth grade subjects on word and color-word cards, respectively. For second graders, a significant correlation of  $-.44$  ( $p < .01$ ) was obtained on the color cards. The researcher concluded that intelligence must be taken into account when the Stroop is used with young children and when time is used as the criterion measure.

Gardner, R.W., & Lohrenz, L.J. Leveling-sharpening and serial reproduction of a story. Bulletin of the Menninger Clinic, 1960, 24, 295-304.

SUBJECT: Based upon previous research findings relating leveling to repression, the researchers hypothesize that levelers would differ from sharpeners when transmitting a story in these ways: In the number of story themes retained; in the number of themes

transposed or contaminated with other themes; and in the number of new themes imported into the story.

METHOD: The subjects were five women levelers and five women sharpeners, based upon their scores on the schematizing test. They ranged in age from twenty-one to thirty-seven. Levelers were tested in one session, sharpeners in another, on serial reproduction of a folk tale entitled "The Son Who Tried to Outwit His Father." The experimenter first told the story to a subject, who in turn told it to the next subject, and so on, in "Game of Gossip" fashion.

RESULTS: Levelers lost more themes (79 vs. 116), lost the overall structure of the story, and presented more fragmented productions than sharpeners. Because of the interdependence of the subjects' serial reproductions within the two groups of subjects, no statistical tests of group differences were run. However, the overall differences between the two groups were striking.

Gardner, R.W., & Long, R.I. Leveling-sharpening and serial learning. Perceptual and Motor Skills, 1960, 10, 179-185.

SUBJECT: The relationship between leveling-sharpening and serial learning was investigated, specifically with regard to: a) amount learned, b) number and nature of intralist intrusions, c) number of intralist transpositions (in learning and recall), and d) number of words recalled.

METHOD: Ten women levelers and ten women sharpeners, ranging in age from twenty-one to thirty-seven, were tested. Leveling-sharpening was measured by the Schematizing Test; the Serial Learning Test was administered via an electronic memory drum, subjects were given two eight-word lists. All of the words were similar, in that they all began and ended with the same letters. A one-tailed T-test was used for analysis.

RESULTS: Although sharpeners tended to give more responses, they made fewer errors. They made significantly fewer backward errors than levelers ( $p < .02$ ).

Gardner, R.W., Holzman, P.S., Klein, G.S., Linton, H.B., Spence, D.P. "The constricted-flexible control principle," Cognitive control: A study of individual consistencies in cognitive behavior. Psychological Issues, 1959, 1, 53-66.

SUBJECT: This review article describes the constricted-flexible control and the tests used for its measurement,

The constricted-flexible variable is defined as differing reactions to stimulus fields containing contradictory or intrusive cues. Gardner and his colleagues point out that this variable is in many ways similar to Witkin's construct field independence-field dependence.

Golden, C.J. A group version of the Stroop Color and Word Test. Journal of Personality Assessment, 1975, 39, 386-388.

SUBJECT: This study attempted to develop a form of the Stroop that could be used in both group and individual settings. The group test does not require a spoken response.

METHOD: Subjects were 240 college undergraduate and 300 high school students. Average age within the sample was 18. The test consisted of three pages stapled together. The first page consisted of word colors in black ink. On the second page the items were X's colored in red, green, or blue ink. On the third page the words for colors were printed in inappropriate colors. Thirty subjects took the individual form of the test twice; sixty took both forms; and 240 took the group form twice.

RESULTS: Reliabilities for the group form were .89, .84, and .73 for the word, color, and color word pages, respectively. For the subjects taking both forms, cross-form reliabilities were .85, .81, and .69. The researchers concluded that the two forms of the test are equivalent and can be used interchangeably.

Gottesman, M. A comparative study of Piaget's developmental schema of sighted children with that of a group of blind children. Child Development, 1971, 42, 573-580.

SUBJECT: Haptic perception as a matter of conversion of kinesthetic experiences to visual imagery versus haptic perception as direct kinesthetic learning.

METHOD: Two groups of sighted children (N = 15 each) and one group of congenitally blind children (N = 15) were given three-dimensional shapes to experience tactually only. One sighted group was then asked to match the shapes they had felt from four figures in a visual display. The second sighted group and the blind group were asked to respond tactually by identifying the shapes by touch.

RESULTS: No significant differences in percentage of correct responses were found among any of the groups. This caused Gottesman to question Piaget's contention that haptic perception is a matter of conversion of

kinesthetic experiences to visual imagery. Although it cannot be known whether sighted children using tactile impressions only were mentally making the conversion to visual images, it is doubtful that the congenitally blind children were doing so.

Harvey, O.J., Hunt, D.E., & Schroder, H.M. Conceptual Systems and Personality Organization. New York: Wiley, 1961.

SUBJECT: This book is the original discussion of an "integrative complexity" conceptualization of cognitive complexity/simplicity. The authors discuss this conceptualization and identify four levels of abstraction/concreteness or integrative complexity. The book is the foundation of the conceptual-systems theory of cognitive complexity.

Harvey, O.J., White, B.J., Prather, M.S., Alter, R.D., & Hoffmeister, J.K. Teachers' belief systems and preschool atmospheres. Journal of Educational Psychology, 1966, 57, 373-381.

SUBJECT: Educational atmospheres produced by teachers with varying levels of integrative cognitive complexity.

METHOD: A sample of Head Start teachers were tested for integrative cognitive complexity and consequently assigned to one of 3 conceptual "systems". Trained observers then rated the teachers on 26 behavioral dimensions which reflected the kind of educational atmosphere they fostered. A cluster analysis was used to study the dimensions underlying the 26 dimensions.

RESULTS: Two major "atmospheres" clusters were obtained: "dictatorialness" and "task orientation." Several significant differences were found on both clusters for teachers with different conceptual systems.

Holtzman, P.S. Cognitive attitudes of leveling and sharpening in time-error assimilation tendencies (Doctoral dissertation, University of Kansas at Lawrence, 1952).

SUBJECT: Noting strong individual consistencies in a previous time-error study (Koester, T. Time-error and sensitivity in pitch and loudness discrimination. Archives of Psychology, May 1945, p. 297.), Holtzman hypothesized there might be a relationship between the dimension of leveling-sharpening and assimilation tendencies in the time-error: that levelers would show more of a tendency to assimilate memory traces than sharpeners.

METHOD: Holtzman devised the schematizing test to measure leveling-sharpening, which measures the ability of the subject to keep up with projected squares which systematically increase in size. He tested 43 young adult subjects, male and female, 21 of whom were extreme sharpeners and 22 of whom were extreme levelers. He performed a time-error experiment in each modality: visual, auditory, and kinesthetic. RESULTS: Through an analysis of variance, Holtzman found that levelers and sharpeners do differ in the predicted direction on assimilation effects in time-error: that levelers show a greater tendency to assimilate traces to the interpolated field. In each modality, the differences were significant at the .05 level or less.

Holtzman, P.S., & Gardner, R.W. Leveling and Repression. Journal of Abnormal and Social Psychology, 1959, 59, 151-155.

SUBJECT: Because levelers obscure size and weight differences in tests of successive comparison on the schematizing test, the researchers hypothesized that levelers would tend to use repression as a way of coping with conflict.

METHOD: Subjects were ten extreme levelers and ten extreme sharpeners selected from a larger group of eighty by their performance on the schematizing test. They were female university students ranging in age from 18 to 21. The Rorschach test was administered individually to each subject. The twenty records were then rated on a four-point scale indicating the degree of the subjects' reliance on repression as a defense. None of the raters knew which subjects were levelers or sharpeners.

RESULTS: Six subjects, all levelers, received an average rating of 3.00 or above, indicating a strong tendency to use repression as a defense. Of the remaining fourteen subjects who rated lower in reliance on repression, ten were sharpeners and four were levelers. The researchers concluded that there is a link between repression and leveling, but the exact nature of the link remains to be determined.

Holtzman, P.S., & Klein, G.S. The "schematizing process": Perceptual attitudes and personality qualities in sensitivity to change. American Psychologist, 1950, 5, 312.

**SUBJECT:** Individual differences in response to changing stimuli are described; these differences are labeled leveling-sharpening, and they are related to personality qualities.

**METHOD:** Fifty adult men and women were tested by use of the schematizing test, which presents to the subject squares of successively increasing size. The subject was to judge the size of each projected square.

**RESULTS:** The group dichotomized into those who increasingly underestimated the size of the squares and those who shifted appropriately throughout. With Q-technique, using a trait universe compiled from Murray's definition of needs, these groups were found to be related to personality qualities labeled a self-constriction vector and a self-outward vector.

Isakson, M., & Moore, J.W. The effects of training of analysis upon the responding style of impulsive children. AERA, 1972.

**SUBJECT:** Impulsive students need training in analysis to reduce errors on tasks requiring analytic processing. This study attempted to alter impulsive behavior to more reflective behavior through reduction of number of errors.

**METHOD:** Thirty-four second grade boys were selected who were identified as impulsive on the MFF. After a pretest, the experimental group received three phases of training in analytic relationship training, detail recall training, and detail matching training; this was followed by a post test. A series of analyses of variance was used to analyze the data.

**RESULTS:** The subjects in the experimental group made fewer errors than the subjects in the control group. This result seems to indicate that attention to details may increase accurate response behavior. Because response time was not increased as errors decreased, it is postulated that latency and errors are independent.

Kagan, J., & Messer, S.B. A reply to "Some misgivings about the Matching Familiar Figures Test as a measure of reflection-impulsivity." Developmental Psychology, 1975, 2, 244-248.

**SUBJECT:** An attempt to clarify issues raised by Block, Block, and Harrington regarding the conceptualization, operationalization, validity and interpretation of reflection-impulsivity.

METHOD: Relevant research is cited and interpretation of results offered to clarify points of discrepancy raised by Block, Block and Harrington.

RESULTS: Although the authors believe Block, Block and Harrington have raised some important issues concerning reflection-impulsivity, the latter researchers are basing their criticisms on work with pre-school children and the implications of the MFF are different for older children.

Kagan, J., Moss, H.A., & Sigel, I.E. Psychological significance of styles of conceptualization. In J.C. Wright and J. Kagan (Eds.). Basic cognitive processes in children. Monographs of the Society for Research in Child Development, 1963, 28, No. 2, (serial no. 86).

SUBJECT: Implications and correlates of preference for analytic conceptualizing style in children and adults.

METHOD: Eight different studies are reported, using a variety of types of subjects, stimulus material, and analysis methods.

RESULTS: A variety of findings are reported, including consistencies of conceptualizing style across several types of behaviors, personality and behavioral correlates of conceptualizing styles, ability and learning performance correlates of conceptualizing styles, and sex and age differences in conceptualizing styles.

Kagan, J., Pearson, L., & Walch, L. Modifiability of an impulsive tempo. Journal of Educational Psychology, 1966, 6, 359-365.

SUBJECT: Two tutoring conditions were used to train impulsive first graders to become reflective. After training both groups showed longer response latencies.

METHOD: A group of 155 first grade children were administered the MFF. Forty children were chosen for each training group. In one group the experimenter persuaded the children that they had showed interests and attributes; in another group the experimenter did not persuade at all. The training procedure emphasized the inhibition of impulsive answers but did not provide training in improved visual scanning techniques or analytic reasoning.

RESULTS: It appears that the only important result of the training was to increase the response latencies of the subjects to the MFF. Error scores were not much affected by the training. The study demonstrated that impulsive children may be taught to modify their behavior.

Karp, S. Field dependence and overcoming embeddedness. Journal of Consulting Psychology, 1963, 27, 294-302.

SUBJECT: This study evaluates two alternative hypotheses: That field dependence involves the ability to overcome embedding contexts; and that field dependence involves the ability to resist distraction. Distraction situations are operationally defined by Karp as those in which irrelevant stimuli surround or intersect critical test items that must be located or manipulated by the subject. This is somewhat different from embeddedness situations, in which the critical item is organized into new and competing gestalts. In the distraction situation, the figural properties of critical items remain intact.

METHOD: Subjects were 150 undergraduate males, ages from 17 to 43 years. The researcher administered the Body Adjustment Test, Rod and Frame Test, Embedded Figures Test (all of the above designed by Witkin); 6 subtests of the WAIS, match problems and insight problems (both tests of adaptive flexibility), digit symbol, three distracting contexts test, and arithmetic operations. Karp ran a factor analysis, rotating 4 and 8 factors. Loadings of .25 or greater were considered significant.

RESULTS: There was a complete absence of overlap of significant loadings of tests involving different kinds of contexts on either 4 or 8 factor solutions. Four of the 7 factors involved attention, memory, or concentration. Karp's major conclusion from the study was that the ability to overcome embeddedness is factorially different from the ability to resist distraction.

Kelly, G.A. The Psychology of Personal Constructs, Vol. 1. New York: Norton, 1955.

SUBJECT: This book is the original work in cognitive complexity/simplicity. The author discusses the idea of personal constructs and their classification as simple or complex. He also describes the Role Construct Repertory (REP) Test for measuring cognitive complexity. He also discusses his view of personal constructs as dynamic rather than static, changing with time and experience.

Kogan, N. Educational implications of cognitive styles. In Lesser, G. (Ed.). Psychology and Educational Practice. Scott Foresman & Co., Glenview. Ill. C. 1971.

SUBJECT: This article gives a thorough review of ten different cognitive styles that have been identified and researched.

METHOD: Each cognitive style was discussed in terms of theory, research, and educational implications. The ten cognitive styles discussed include: field dependence-independence, scanning, breadth of categorization, conceptualizing styles, cognitive complexity vs. simplicity, reflectiveness vs. impulsivity, leveling vs. sharpening, constricted vs. flexible control, tolerance for incongruous or unrealistic experiences, and risk taking.

RESULTS: The author concludes that in general the cognitive style dimensions are internally consistent and relatively stable over time, with a trend toward generality clearly present in most of them. He encourages the development of long term cognitive strategies that are of adaptive value within as well as outside the classroom and feels this can be done if "energy and imagination are applied to the task."

Lee, L.C., Kagan, J., & Rabson, A. Influence of a preference for analytic categorization upon concept acquisition. Child Development, 1963, 34, 433-442.

SUBJECT: Relationship of analytic conceptualization to concept acquisition involving analysis of figure and ground.

METHOD: Fourth-grade children were tested for analytic and relational conceptualizing style. They were then asked to associate over trials a nonsense label with geometric designs containing figure and ground elements. After learning to criterion, they were shown the figure and ground components separately and tested for association with the nonsense syllable label.

RESULTS: The analytic children were more accurate in correctly associating the label with the figural component presented alone.

Lockheed, M. E. Cognitive style effects on sex status in student work groups. Research Bulletin, Educational Testing Services, Princeton, New Jersey, 1976, RB 76-18.

SUBJECT: The purpose of this study was to determine if the greater activity, and task orientation of males in mixed-sex work groups (as observed in previous studies) would be systematically different according to different cognitive styles of the group members.

METHOD: Ninth, tenth, and eleventh grade high school students were classified as to cognitive style

(field-dependent, field-independent, indeterminant) and then placed into homogenous cognitive style groups of two males and two females each. The groups were videotaped as they engaged in a group decision-making task which was coded for individual rates of activity and influence. Group members also rated each other as to best ideas, most guidance and direction, and as to overall leadership.

RESULTS: The data indicated the field-dependent and the indeterminant groups displayed more male-dominated interactions, while the field-independent groups had equal sex status interactions. Males were also identified as being the leader more often regardless of the type of cognitive group.

Long, G.M. Field dependency-independency: A review of the literature. Pensacola, Florida: Naval Aerospace Medical Research Laboratory, Naval Aerospace Medical Institute. 1972.

SUBJECT: This paper represents an attempt at an extensive review of the perceptual style literature in terms of the field dependence-independence concept.

METHOD: This review included sections on the psychometric measure, Rod and Frame Test (RFT) and Embedded Figures Test (EFT) and their problems, relationships between the EFT and the RFT, the critical considerations, and use of the concept in practical research.

RESULTS: The author concludes that although the basis of perceptual differences is still in question the usefulness of the empirically derived relationships is still viable and much more investigation must be done.

Lowenfeld, V. Tests for visual and haptical aptitude. American Journal of Psychology, 1945, 58, 100-112.

SUBJECT: Definition of visual and haptic perceptual types and descriptions and explanations of tests to identify them in individuals. Also, results of studies in which these tests were administered to subjects.

METHOD: Five tests of visual-haptic aptitude were administered and their responses analyzed according to procedures discussed in the article. A total of 1128 responses were obtained from 224 subjects.

RESULTS: Judging from analysis of subjects' total scores on all five tests, 47% of the subjects were clearly visual, 23% were haptic, and 30% were indefinite.

Lowenfeld, V., & Brittain, W.L. Creative and Mental Growth (5th Edition). New York: MacMillan Company, 1970.

SUBJECT: This book contains discussions of the visual and haptic types and manifestations of perceptual type. Especially in various forms of artistic expression. Numerous examples are used to illustrate typical visual and haptic creations.

McKinney, J.D. Problem-solving strategies in reflective and impulsive children. Journal of Educational Psychology, 1975, 6, 807-820.

SUBJECT: The development of problem-solving strategies in reflective and impulsive children is described and an assessment of the generality of strategy behavior in the two style groups across a variety of problem-solving tasks was made.

METHOD: 173 children, 7-, 9- and 11-year-olds, were administered the Matching Familiar Figures Test and classified as impulsive (86) or reflective (87). The subjects were also administered the Wechsler Intelligence scale for children. The final sample was composed of 75 boys and 98 girls. The subjects were individually administered the Matrix Solution and Pattern Matching Tasks, and in a subsequent session 20-question tasks were given. A 2x2x3x4 mixed factorial design was used for analyses.

RESULTS: The data obtained in this study indicated that problem-solving strategies are affected by the impulsive or reflective cognitive style. Reflective subjects seemed to process task information more efficiently than impulsive subjects and used more mature strategies. Cognitive style had the most significant impact on the problem-solving behavior of the 7- and 11-year-olds. Reflectives were more apt to use a focusing approach in a variety of problem situations.

Messer, S. Reflection-impulsivity: Stability and school failure. Journal of Educational Psychology, 1970, 6, 487-490.

SUBJECT: The stability of the reflective-impulsive cognitive style was studied over a 2 1/2 year period. Also examined is the degree of reflection-impulsivity of a small subsample of children who failed a grade during the study period.

METHOD: 65 boys, administered the Matching Familiar Figures Test in grade 1, were retested 2 1/2 years later, in the spring term of grade 3. For the retest, a more difficult version of the MFF was administered.

RESULTS: There was a significant relationship ( $p < .05$ ) between the distributions of reflective and impulsive

subjects for grades 1 and 3. Of the 65 boys tested, 7 had failed a grade and were in grade 2 at the time of the retest. There was a significant difference between the boys who failed and the other boys on latency and errors for grades 1 and 2 1/2 years later ( $p < .01$ ); the failures were more impulsive both times. The correlations of latency and errors for 2 1/2 years were modest compared with up to one year. The drop in stability may be due to the cognitive style of the teacher (modeling effect) or anxiety aroused in the school situation.

Oltman, P.K., Ehrlichman, H., & Cow, P.W. Visual asymmetry in the perception of faces and field independence. Research Bulletin, Educational Testing Services, Princeton, New Jersey, 1976, RB-76-13.

SUBJECT: This was an investigation into the relationship of hemispheric lateralization and the cognitive dimension of field dependence-independence.

METHOD: Two separate experiments were performed in which college subjects were asked to select from two human faces the one that most resembled a third face. Actually, the two faces were composites, one of the right half of the third face and its mirror image, the other, the left half of the third face and its mirror image. Previous research had indicated that an observer's impression of what someone looks like is determined more by one side of the face than the other. This was an attempt to see if this preference was affected by the field dependent-independent dimension.

RESULTS: It was found that field-independent subjects showed a significantly stronger tendency to select the left-visual-field composite in their perceptions of faces than did the field dependent individuals, who are less differentiated psychologically, and also seem to be less differentiated in terms of extent of left-visual-field lateralization in the perception of faces.

Pohl, R.L., & Pervin, L.A. Academic performance as a function of task requirements and cognitive style. Psychological Reports, 1968, 22, 1017-1020.

SUBJECT: Relationship of level of integrative cognitive complexity to academic success in selected subjects

METHOD: Male college undergraduates in the fields of engineering, natural sciences, humanities, and social sciences were tested for their level of integrative cognitive complexity. Controlling for

SAT-verbal and SAT-math scores, their grades in their subject fields were correlated with their complexity scores.

RESULTS: Low-complexity students achieved higher grades in engineering, while high-complexity students achieved higher grades in humanities and social sciences. No relationship was found between cognitive complexity scores and grades in natural sciences.

Runkel, P.J., & Damrin, D.E. Effects of training and anxiety upon teachers' preference for information about students. Journal of Educational Psychology, 1961, 52, 254-261.

SUBJECT: Training effects on cognitive complexity in adults.

METHOD: Teacher trainees were tested at the beginning, middle, and end of their training concerning the variety and complexity of information they deemed important for teachers to know.

RESULTS: A curvilinear relationship was found between time spent in training and cognitive complexity. At the beginning of training, the trainees possessed a large number of constructs. These diminished to a small number in the middle of training, but rose to a large number again by the end of the training. Apparently the training, at its midpoint, was causing a focusing of attention on a few major constructs stressed in the training, but this focusing disappeared at the end of training, at which time the trainees could return to their original complex set of constructs.

Sack, S.A., & Rice, C.E. Selectivity, resistance to distraction and shifting as three attentional factors. Psychological Reports, 1974, 34, 1003-1012.

SUBJECT: This study attempted to analyze the act of attending, based upon the premise that attention can be analyzed into at least three processes: degree of selectivity, resistance to distraction, and shifting.

METHOD: Subjects were 164 eighth-grade students. Three tests considered to measure selectivity of attention were administered: the Group Embedded Figures Test, Closure Flexibility, and the Hidden Figures Test. To assess distraction, three tests from Karp's Kit of Selected Distraction Tests were used: the Arithmetic Operations Test, Distracting Contexts Test, Cancellation, and a group adaptation of the Stroop Color Word Test. To assess shifting, two tests were prepared: Anagrams,

in which the subject is to unscramble letters to form words; and reversed triangles, in which the subject draws a series of triangles and then has to rearrange them as instructed.

RESULTS: The procrustes method was used to determine if the obtained factor matrix conformed to the hypothesized matrix. Three factors emerged from the analysis, Identified as selectivity, resistance to distraction, and shifting. As anticipated, the selectivity factor was defined by the embedded figures tasks, with moderate loading by the Stroop test. Ability to resist distraction was defined by Karp's distraction tests and by triangles. The shifting factor was defined by the Stroop, cancellation, triangles, and anagrams. Tests loaded as predicted, except for the Stroop, which is often interpreted as requiring the ability to resist distraction.

Santostefano, S.G. Developmental study of the cognitive control "leveling-sharpening." Merrill-Palmer Quarterly, 1964, 10, 343-360.

SUBJECT: The development of the cognitive control leveling-sharpening in children is explored across three leveling-sharpening tests.

METHOD: Sixty children, ages six, nine, and twelve (twenty per group, ten boys and ten girls in each age group) were given three leveling-sharpening tests designed by Santostefano: The Wagon Test (elements subtracted); The Wagon Test (elements added); and the Circles Test, in which circles of ever-increasing diameter are sequentially displayed. In each task, the subject was required to detect changes in the display. A 2 x 3 factorial design was used, so that age, sex, and the interaction of age with sex were examined for significance as the main effects with an analysis of variance.

RESULTS: The data obtained in the study indicated that sharpening scores increase with age, with the greatest increases between ages nine and twelve. The leveling-sharpening Wagon Test, elements subtracted, was judged the most effective instrument for children. On that test, the difference among age groups was significant ( $p < .01$ ), with boys exhibiting more sharpening than girls ( $p < .01$ ).

Santostefano, S.G. Cognitive controls versus cognitive styles: Diagnosing and treating cognitive disabilities in children. Seminars in Psychiatry, 1969, 1, 291-317.

SUBJECT: This factor analytic study sought to determine the interrelationships of cognitive controls in terms of their developmental appearance in children.

METHOD: A battery of 29 cognitive tests were administered to a sample of children 6-, 9- and 12-year-olds. A factor analysis was performed.

RESULTS: Five factors emerged: Focal attention control; leveling-sharpening plus motor delay; motor delay control; leveling-sharpening control; and field articulation control. Cognitive control tests loaded on other factors in such a way that suggested to Santostefano a synthesis which he formulated in terms of a developmental model of cognitive control, in which focal attention predated field articulation developmentally; in turn field articulation predates leveling-sharpening.

Santostefano, S., & Paley, E. Development of cognitive controls in children. Child Development, 1964, 35, 939-949.

SUBJECT: This study attempts to ascertain if the two cognitive controls focusing-scanning and constricted-flexible, which have been identified in adult cognitive functioning, can also be isolated in the functioning of children and to explore whether these cognitive controls follow a developmental course.

METHOD: Sixty children randomly selected from a public school, composed of 6-, 9- and 12-year-olds, with ten boys and ten girls in each age group, matched approximately for intelligence as determined by the California Mental Maturity Tests, were tested. Two tests designed by Santostefano were administered individually: The Circles Test, a measure of focusing-scanning; and the Fruit Distraction Test, a measure of the constricted-flexible control. A 2 x 3 factorial design was used for data analysis.

RESULTS: The 12-year-olds displayed significantly superior performance ( $p < .01$ ) on the Circles test, but no significant differences were found with respect to sex or interaction of sex and age. Performance on the Fruit Distraction Test improved significantly with age ( $p < .05$ ), but again no significant differences were found with respect to sex and the interaction of sex with age. The researchers concluded that these two cognitive controls do operate in children and follow a developmental course from scanning to focusing, and from constricted to flexible, with an increase with age.

Schroder, H.M., Driver, M.J., & Streufert, S. Human Information Processing. New York: Holt, Rinehart & Winston, 1967.

SUBJECT: This book discusses the conceptual-systems approach to cognitive complexity. It describes four systems or levels of cognitive functioning and a sentence-completion test to measure an individual's level of functioning.

Signell, K.A. Cognitive complexity in person perception and nation perception: A developmental approach. Journal of Personality, 1966, 34, 517-537.

SUBJECT: Cross-sectional study of developmental changes in cognitive complexity/simplicity.

METHOD: A sample of children from ages 9 to 16 were pretested for differentiation in cognitive complexity. Half the children were asked to judge familiar persons; the other half were asked to judge nations. Age differences in both kinds of judgements were evaluated in terms of number and variety of dimensions used in judgements and degree of articulation within the dimensions.

RESULTS: When familiar persons were judged, children showed increasing cognitive complexity with age through greater articulation of constructs already in their repertoire, rather than through the addition of cognitive complexity increases with age through the new constructs. However, when nations were judged, cognitive complexity increased with age through the acquisition of new constructs rather than through differentiation. The author concluded that a difference existed in the way children develop cognitive complexity with respect to "experimental" learning needed in their everyday life and "didactic" learning in the formal setting of classrooms of ideas not relevant to their daily social environment.

Watchel, P.L. Style and capacity in analytic functioning. Journal of Personality, 1968, 36, 202-212.

SUBJECT: Relationships between analytic-relational conceptualization and field independence-dependence.

METHOD: College students were given Kagan's Figure Sorting Task (FST) as a measure of analytic-relational conceptualizing style and Witkin's Embedded Figures Test (EFT) as a measure of field independence-dependence. The subjects were then required to recognize element, form, and background components of designs.

RESULTS: Subjects with extremely high scores on EFT did significantly better than those with extremely low scores in the identification of the components. Performance was not, however, related to performance on the FST, nor was FST related to EFT performance. The author combined his findings of relationship between learning of part-variations of designs to field independence but not to conceptualizing style for adults with contrasting findings by other researchers (see Lee, et al., 1963) of relationship between the same sort of learning task and conceptualizing style in children. He concluded that in adults, field independence measured analytic capacity, while conceptualizing style was a preference dimension; but in children, the conceptualizing style sorting task represented an analytic capacity measure much like field independence.

Walter, W.G. The Living Brain. New York: W.W. Norton & Company, 1963. Chapter 8, "Intimations of Personality," pp. 197-232.

SUBJECT: Brain alpha waves as a physiological basis for visual and non-visual (haptic) functioning.

METHOD: Previous research is reported documenting the tendency of individuals with persistent alpha rhythms to prefer auditory, kinesthetic, and tactile perception to visual imagery. Approximately 600 subjects were tested with an EEG for alpha wave activity with and without the presence of visual image stimuli. Alpha waves are typically prominent when the eyes are shut and the mind is at rest and disappear when the eyes are opened, when visual imagery is either seen or induced mentally, and when the subject makes a mental effort.

RESULTS: About 2/3 of the subjects were found to display responsive alpha activity. About 1/6 produced constant alpha, and another 1/6 produced no significant alpha at all. In light of the relationship reported between perceptual modality preference and alpha activity, it was concluded that those individuals with no significant alpha were habitually thinking in the visual imagery mode, while those with persistent alpha were not responsive to visual imagery.

Witkin, H.A. The perception of the upright. Scientific American, 1959, 200, 50-56.

SUBJECT: This article involves a complete description of the perceptual styles field-dependence-independence and describes the theoretical basis for this dimension.

**METHOD:** The discussion includes many important aspects of the perceptual styles such as ability to use visual vs. kinesthetic cues; personality factors such as motivation, emotion, and defenses; field-dependence as a continuum, changes over time, disembedding figures, analytical competence; early life experiences; etc.

**RESULTS:** The field dependence-independence dimension is seen as a very productive area for research and as a theoretical dimension that might prove very useful in understanding psychological and perceptual aspects of everyday interactions.

Witkin, H.A., Dyk, R.B., Faterson, H.F., Goodenough, D.R., & Karp, S.A. Psychological Differentiation: Studies of Development. New York: Wiley, 1962.

**SUBJECT:** This book gives a complete description of Witkin's theory of psychological differentiation.

**METHOD:** This book gives a complete description of the development of the psychological differentiation theory. Areas covered include description of the Rod and Frame Test, Embedded Figures Test, and other related tests. Also covered were the developmental aspects of the theory, relationship of differentiation to intelligence, Rorschach responses, memory, body concepts, separate identity, defense mechanisms, attitudes, pathology, mother-child relationships, etc.

**RESULTS:** This book gives reasoning behind the psychological differentiation theory and indicated that individuals who differ on cognitive style also differ as to how they satisfy needs, resolve conflicts, handle aggression, form attitudes, etc.

Witkin, H.A., Lesis, H.B., Hertzmann, M., Machover, K., Meissner, P. & Wapner, S. Personality Through Perception. New York: Harper, 1954.

**SUBJECT:** This book reviews the research done by Witkin and his associates dealing with the perceptual style area.

**METHOD:** The perceptual style research is covered in detail. Descriptions of testing procedures (Rod and Frame Test, Tilting Room, Tilting Chair Test, Revolving Room Test, Embedded Figures Test, Body Adjustment Test, etc.) were also given and their use in the research is described.

**RESULTS:** A synthesis of the research indicated that individuals perceive the upright either visually or kinesthetically (body position), with women more field dependent than men. It was concluded that the field independence-dependence dimension was a psychologically

related feature of an individual's makeup.

Witkin, H.A., Moore, C.A., Goodenough, D.R., & Cox, P.W.  
Field-dependent and field-independent cognitive styles  
and their educational implications. Review of  
Educational Research, 1977, 47, 1-64.

**SUBJECT:** This article reviewed the concepts and methods  
derived from work on cognitive styles (field  
dependence-independence in particular) over the past  
25 years and related the findings of this research to  
problems in education.

**METHOD:** This article gives a thorough review of the  
development of the articulate and global cognitive  
style dimension and the instruments used for its  
measurement. Detailed characterizations of the  
cognitive styles in perceptual and intellectual domains  
and in personality domains (social behavior, body  
concept, and defenses) were done. Also four areas of  
learning that have been explored with respect to  
cognitive style were discussed in detail. These areas  
included learning of social material, the effects of  
social reinforcement, mediating mechanisms in learning,  
and cue salience. Other important topics such  
as teacher and student cognitive styles and their  
interaction, and educational-vocational interest and  
choices in relation to cognitive styles were explored.

**RESULTS:** This article indicates that cognitive style  
characteristics are extremely important in education  
and must be studied in more detail in order to  
maximize educational opportunities for all.